STATE OF ILLINOIS
IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT
LAWRENCE COUNTY

CATHY BERKSHIRE, Individually and as Special Administrator of The Estate of RAYMOND TEDFORD, Deceased.	)	
Plaintiff,	)	Lawrence County
-vs-	)	No. 05-L-8
OWENS-ILLNOIS, INC.,	)	
Defendant.	)	

BEFORE THE HONORABLE MARK L. SHANER

EXCERPT OF THE REPORT OF PROCEEDINGS, being the testimony of PETER NEUSHUL, had on the 25th day of January, 2008.

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Attachment 12

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I N D E X

(The following Excerpt of the Report of Proceedings, being the testimony of PETER NEUSHUL, were had in open court in the presence of the Jury.)

THE COURT: All right. Mr. Fischer or Mr. Casmere, do you wish to present some evidence?

MR. FISCHER: Yes, Your Honor. May it please the Court, we'd like to call Dr. Peter Neushul to the stand.

THE COURT: Dr. Neushul, if you could come forward, raise your hand, and then have a seat in this chair.

(Witness sworn by the Clerk.)

PETER NEUSHUL,
called as a witness on behalf of the Defendant, being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION
BY MR. FISCHER:

Q. Good morning.

A. Good morning.

Q. Will you introduce yourself to the jury, please?

A. My name is Peter Neushul. I'm a historian. I live in Santa Barbara, California. I --

THE COURT: I'm sorry, sir. Could you place that microphone a little closer and make sure it's turned on? Okay.

THE WITNESS: Okay. My name is Peter Neushul. I am a historian from Santa Barbara, California. I specialize in the history of technology, history of medicine, 20th century U.S. history. I also do some environmental history and I've taught some general U.S. history as well.

Q. You mention that you teach. Have you written in your areas?

A. Yes. My specialty is American technology so I certainly have written in those areas. Within the history of medicine I've focused a lot on the history of antibiotics which were developed during the 20th century, especially penicillin which interests me because it has an impact on everyone's lives all the time; we all take antibiotics, give antibiotics to our children. So those, that's one topic which I think you would probably be familiar with that I've written pretty

extensively about.
Q. Other than teaching and writing, what else do you do?
A. Well, I'm a working historian. I do teach at the University of California Santa Barbara but I also have a long-term contract with the army to write histories for them; in particular, the U. S. Army Corp of Engineers in the southwest and so I will produce a history for them every year. And I will also do a number of oral histories, which it could be generals, it could be civilian personnel in charge of construction projects. But in each of those instances, or especially with regard to the history, I'm looking at the context of what's happening or what happened with the projects because a hundred years from now we're going to want to know what, what those people were thinking when they did what they did. You can look. The Corp has been building and having an impact on our society since the beginning of the country. And certainly the events in New Orleans recently are a very, very good example of why we need to understand what the history of the Army Corp was and what the perspective was of the people at that time when they were doing the work that they did.
Q. What does it mean to be a working historian in

2007? Specifically what are you doing and why is it necessary.
A. Well, I don't just draw income from teaching. I have to compete for grants to produce these histories for the Corp. So they, the Corp needs to know and -- you know, we, of course the Corp is our agency, it's the taxpayers and so on. They need to know, first of all, where all the money is going into these billions and billions of dollars worth of projects but they really need to know what, you know, what were the challenges at that time, you know, what were these, what were these people addressing because these projects will outlive the engineers that start them and a new engineer will have to start that project up. In many cases the project won't even start and all the people that started it will be gone. So you have to know what came first, what came before, what were the attitudes at that time, what were the challenges at that time. And, you know, we can today, all of us I think will agree, that 50 years from now people will be able to look back at what we are doing today and say, hey, they made some mistakes, they're not doing the right thing but they had, they were -- we think we're doing great right now; everything we're doing is right. But fifty years from

now undoubtedly people will look back and go, Oh, you know, they didn't know this, How silly, We know that now. But you can't, as a historian you have to take yourself back within the context of the time and understand how people felt at that time.
Q. That's kind of my next question, Dr. Neushul, which is, why does the Army Corp of Engineers need someone with a Ph.D. in history as opposed to just somebody to go back and read the memos that were written?
A. Yeah. If you ask an engineer from today to go back and try and understand how an engineer was working a hundred years ago, they're going to look at it and say this person didn't know, you know, what the heck were they doing. You know, they're making mistake after mistake after mistake. We don't do things that way anymore. We don't, we use CAD programs to generate our, our drawings. I don't even understand the drawings that this person is working from. So they will not be able to interpret the artifacts or the data that was generated by this earlier generation of engineers. And for that reason you explicitly want someone with experience in history of technology to go back and look at what was engineering like in, centuries ago or a

hundred years ago and why is it, and in using those historical tools to understand why things were the way they were at that time. So a contemporary engineer is not going to be able to relate to that, and yet, because the projects are ongoing with the Corp they have to be able to, they have to be able to understand what it was that these people were doing.
Q. What is a historical method?
A. Okay. Let me -- I want to try and use a local history example to explain what my methods would be you may or may not be familiar with and you may know a lot more about it than I do. But when I came to Vincennes I saw the name George Rogers Clark, which is familiar to me because I lecture on the Lewis and Clark expedition and I know that George Rogers Clark was William Clark's older brother. But I've also, of course, looked at general U.S. history, especially through the Revolutionary War, and I know that Clark is a war hero. So I could, if I wanted to learn about this famous military leader I could call up a general from today and ask him. I don't think he's -- he's an expert on, you know, tank formations today, General Schwartzkopf or somebody, but is he going to know a lot about what George Rogers Clark faced, the challenges that he faced

at that time, the issues that he faced at that time? I don't think so. Okay. I'm going to have to use the historical method to gain insight into what happened in the attack on Fort Sackville which made Clark so famous and which is why you have a memorial near here in Indiana and why on February 25th you celebrate, at least Indiana celebrates George Rogers Clark Day. Now, as a historian I'm going to want to look at various sources in order to determine the significance of Clark's military leadership. I could look at a book, a textbook; that would be a secondary source. There might be a little paragraph in there. The person that wrote that paragraph will have looked at other sources. My goal, though, as a historian is, first of all, go in without a bias; you know, I can't have a preconceived notion. If I go in and only read things written by the, you know, the Sons of the American Revolution I'm going to get one side of the story, and yet, there's two sides to that story. There's a British side to that story as well obviously; and there's a third side to the story, there's a Native American side to the story. So, it's a complex story. I can't go in with preconceived notions. I can't go in with, I know the way it was already. So the best thing to get, though, and what I encourage my

students to get, are primary documents: Documents from that time that haven't been changed that will, are going to give me insight on what happened in those days. And it so happens that George Rogers Clark kept a journal and was encouraged after that battle to write up his results by Jefferson, by Adams because this is an incredibly important event in the Revolutionary War. Also, the, Governor Hamilton on the British side, he also kept a journal from that time so from that -- that's a primary document -- I can gain his perspective. Now Clark is the commander. There are times when commanders may be, you know, slapping themselves on the back and so on, so is there any way I can gain insight into the way the people felt that were serving underneath him? Well, there is captain later, Major Bowman, who also kept a journal about what happened at the Battle of Sackville and I can get input from his journal. So those are primary sources. I can look at those. I can put them together and, and look and reconstruct what Clark did and why that battle was important. Now, there will be some things that you will look at and go, boy, you know, by today's standards that is pretty harsh material. I mean Clark, the basic story -- you probably know this -- convinced the British to

surrender to a much smaller force by making them think that he had a big army and causing them to surrender Fort Sackville. The elephant in the room this whole time is that the largest number of solders available are not British, they're not French, they're not American, they're Native American and the British are trying to keep the Native Americans or Indians on their side. Clark --

Q. Dr. Neushul, did you get any sleep last night?

A. No. I'm sorry. I'm just trying to, I'm trying to give a local example. But what, what it comes down to -- and again, I've looked at the primary documents. They're available, all right -- is that Clark does something that's somewhat disturbing. He captures some Native Americans and executes them with, tomahawks them in front of the fort and, you know, you look at that today and go, That's a war crime, That's not a good thing. But this was a pivotal moment in the Revolutionary War. They had to keep, they had to keep the British from gaining control of that part of the country. And remember, if that battle were lost, you know, there's a chance that our founding fathers would not be founding fathers; they would be people who were traitors and be strung up from the highest tree by the

British. And so these were, these were tough times. And you look, you look back using primary documentation to gain insight into that, but it's a Pandora's box to open that up. But I know we'll be talking about other primary documentation and I think it's important to look at all of it, and I don't -- for example, if you're looking at medical literature I think it's important not to necessarily draw all of your information from a doctor from now when things have changed significantly, especially in medicine, as opposed to looking back at the history of medicine and what was the climate, what was the atmosphere from then.

Q. What does the historical method say about corroborating sources?

A. Well, what I, what I was just -- the example that I just gave. I can't just go with Clark's description of his glorious victory. I need to know what the British felt about the victory, I need to know about what other people with Clark felt about it, so I need more than one source. I cannot just take a line out of a letter without realizing, hey, maybe there's 50 letters, maybe that letter is part of a lot of correspondence, and I need to look at all of it.

Q. What would the historical method say about

viewing historical data through what we know now? Obviously we know now the United States is a super power. What would that tell you about General Clark?

A. You know, at that time the United States didn't exist. At that time -- you have to put yourself back within, within that time. There was no United States. Those, the people that were leading the Revolution at that time were taking an incredible risk. If they were to lose they would be executed. The British were very firm in areas like that. You cannot look back then with the attitude of a U.S. super power perspective. The U.S. wasn't a power at all. It didn't exist at all at that time.

Q. What areas of your work as a historian and your studies relate to the use of asbestos in the United States?

A. Well, I -- again, my background is history of technology, history of science, history of medicine. I've taken each of those fields, used the tools within those fields to look at this specific topic. So within history of medicine, I've looked specifically at the history of medicine as it relates to asbestos and the diseases that can be caused by asbestos. So in each of these areas -- and also within the field, for example,

of industrial hygiene, I've looked at the history of industrial hygiene, the names of the people that you've already heard, I'm sure extensively throughout the last few days, are pioneers in that field, and I've looked at their papers and I've looked at their history. I've used the tools of my trade, which I've explained via the George Rogers Clark example, to look back at perhaps a much smaller topic but at the history of asbestos.

Q. I want to go through very quickly and just highlight for the jury what we're going to do with your testimony and then we'll go back and do it in slightly greater detail.

Mr. Tedford, who is Miss Berkshire's father, the Plaintiff in this case, died from mesothelioma. Tell us in headline form what, when did the knowledge about mesothelioma develop in the United States?

A. By looking at the history of medicine, the, the beginning of knowledge of this occurs in 1960 with a paper by Christopher Wagner, who was from South Africa; that's why his name is pronounced Vogner. It's published in a British medical journal in 1960.

Q. And what else happens with the development of knowledge about mesothelioma at that time?

A. After that point you will have probably the most

famous name in the history of medicine as it relates to asbestos, Dr. Irving Selikoff here in the United States, and if you were to look at a newspaper even today you might find his name on occasion in there. He will conduct further research that will affirm the earlier work done by Wagner.

MR. FISCHER: Your Honor, may I approach?

THE COURT: You may.

MR. FISCHER: Okay.

Q. (By Mr. Fischer) Dr. Neushul, this is a slide the jury has seen. Will you take a quick look at that?

A. (Witness complied with the request.) Okay.

MR. FISCHER: Your Honor, may I show it to the jury? This is from Mr. Parker's testimony.

THE COURT: You may.

MR. FISCHER: Okay. The jury may remember this. This is a slide from Mr. Parker's presentation. Everybody got it? Okay.

Q. (By Mr. Fischer) Dr. Neushul, this slide indicates post-1958 knowledge; 1960 mesothelioma, Wagner -- spelled Wagner -- 1964 mesothelioma, Selikoff. Do you have any disagreement with that slide as being the important dates with regard to mesothelioma?

A. No, and, you know, within the history of medicine those are the dates that are accepted.

Q. What kind of disease is mesothelioma?

A. Mesothelioma is a form of cancer.

Q. Okay. Is it a common disease, a rare disease?

A. Mesothelioma is a very rare disease.

Q. Was it a rare disease in the 1960s?

A. A very, very rare disease in the 1960s. Hence, Wagner's publication is, it's why it's publishable. It's a revelation.

Q. What did the medical literature -- how about before, before Wagner published in 1960, what was being published about mesothelioma?

A. Before 1960 there's virtually nothing. There are, there is, in fact, a debate as to whether or not this form of cancer even exists; you know, whether to even call it a separate kind of cancer.

Q. Let's talk a little bit about asbestosis. What's asbestosis?

A. Asbestosis is scarring occurring inside the lungs from inhaling asbestos dust.

Q. When did the medical and scientific literature begin to discuss this scarring in the lungs caused by asbestos?

A. You see a case study as early as 1924 by a British scientist named Cooke and in 1927 he will coin, you will see another case and coin the term asbestosis.
Q. Are there other lung scarring diseases?
A. Yes, there are several. You have --
Q. What are they called?
A. Silicosis is the most prominent of those and from the information you heard earlier, just a few minutes ago, that was a major, major concern -- by far the most significant dust-borne disease -- but you also have dust disease from inhaling coal dust, anthracosis; siderosis from inhaling cotton dust. There's a whole series of dust-borne diseases that you get from inhaling material.
Q. And is that how Cooke ends up with the name asbestosis?
A. Yes. He's not -- he's following a pattern there. There are already what are called -- this is a strange word, but they're called pneumoconioses and they group them all into that, but the major one within that is silicosis.
Q. Is the scarring from asbestos, is it a cancer?
A. No.
Q. What was the, what was the literature in the 1930s with regard to how big of an issue asbestosis is?

A. Well, you, you, at that time you have some industry beginning to emerge that's utilizing asbestos. And especially in great, in England there will be enough cases for a scientist by the name of Merewether to do a survey of an asbestos factory in England and he'll find some workers who have no asbestosis and he'll find some within the plant that have developed asbestosis in the particularly dusty areas of the plant. The plant differs throughout. And, as a result, he will determine that if you remove the dust you can create a safe working environment for everybody. However --
Q. How about the -- I'm sorry. How about the United States literature in the 1930s? What is it saying about this?
A. I think the United States industry emerges somewhat after the British industry. There will be a paper produced in 1938 by a government scientist named Waldemar Dreessen. This is in the 1930s right after the Social Security Act, which, in fact, funds the study, and he will come to the same conclusions as Merewether: That there are parts of these plants where you could contract asbestosis because they're dusty but you can create a safe working environment by using ventilation, by using measures to remove the dust. And, but his

suggestion in that paper will be selecting a very conservative dust level, one at which you could be exposed all day long, eight hours a day, all through the working week and not get asbestosis, and that was five million particles per cubic foot.
Q. What happens with regard to that five million particles per cubic foot number in the years after Dreessen proposes it as the tentative safe level?
A. During the late 1930s and into the 1940s this will become the accepted maximum allowable concentration or threshold limit value. These are names that are used by an organization called the American Conference of Governmental Industrial Hygienists. That field is beginning to emerge at this time. They have a government, a group of government industrial hygienists who choose the five million particles per cubic foot as their safe level. They determine safe levels for Silicote, coincidentally which is also 5 million particles per cubic foot, and numerous other materials; lead. They're looking at industry at this time and saying, hey, people are being exposed to materials and we need to determine what the safe levels are. But again, this is a time when there are very, very few -- probably less than 300 after World War II -- industrial

hygienists in the United States.
Q. How did this field of industrial hygienists relate to the threshold limit value as we're going forward in time?
A. Well, the A.C.G.I.H., the American Conference of Governmental Industrial Hygienists -- that's a mouthful -- will establish what's called a Threshold Limit Value Committee, and every year industrial hygienists on that committee will evaluate, Is this level still going to create a safe working environment? And these are guidelines. They are conservative guidelines and it states that that's what they are. In other words, they're not, they're not saying that, you know, you're okay if you're one percent beneath five million. They, they're hopeful, or they believe that five million is a very, very safe, and they're trying to encourage, you know, a very safe work place by reviewing every year and producing a list of what the TLVs are for various materials.
Q. When did the TLV change from five million particles per cubic foot of asbestos?
A. That's not going to change until the 1960s.
Q. Who is out in the field determining -- what profession is it that determines how much dust, how much

asbestos dust is in the air?
A. That's part of the job of an industrial hygienist. They go out and they take dust measurements. They could follow a worker around all day and attach a device to them to see as they lean over how much dust are they inhaling in various positions in various parts of a manufacturing environment and determine, you know, what their exposures might be, so that's part of their job. But the other part of their job -- and I know you've been introduced to Willis Hazard -- is engineering ways of removing that dust.
Q. And would those engineering methods just be considered general dust control?
A. Those are part of dust control, yes.
Q. Was there, was the information that asbestos could cause the disease asbestosis generally known amongst the medical and scientific community in the 1930s and 1940s and 1950s?
A. Yes, it was.
Q. Was the importance of dust control known in the medical and scientific and industrial hygiene communities in the 1930s, 1940s and 1950s?
A. Absolutely it was.
Q. Were the methods of appropriate dust control

known in the medical, scientific, and industrial hygiene communities in the '30s, '40s and '50s?
A. Yes, they were.
Q. Where were those methods first published?
A. Well, if you look, for example, at the Merewether report, there are two authors to that -- this is the British one -- there's Merewether and there's Price. Price is an engineer. Price will describe methods for removing dust in those areas where people in this British facility are contracting asbestosis. There's an engineering side, also, to the Dreessen report in 1938, the one that the U.S. government will pay for, that describes methods for removing dust in this, in the textile plant in North Carolina. The industrial hygiene journals will emerge during this time as the profession grows and those will include descriptions of engineering methods for handling dust.
Q. How about industrial hygiene organizations? Are they also giving advice about how to control dust?
A. Yes. There are organizations, say, for example, the National Safety Council, which is something we still see evidence of every day in our lives. They are called the Green Cross. They will publish. And, you know, Owens-Illinois is a member of the National Safety

Council. Texaco is a member of the National Safety Council. Virtually every major corporation in the United States is affiliated with the National Safety Council. They will publish information on engineering methods, on, they have huge sections with advertisements for dust control technologies. They're not, of course, just looking at dust-borne disease. They're looking at auto safety. They're looking at all, a series of different safety issues but they are just one of the institutions that, that's around at this time. And again, this is a time when there was no OSHA; there is no Environmental Protection Agency. These things will come a lot later. And there were, however, organizations because businesses were concerned with safety.
Q. So the National Safety Council would have been industry funded at that time?
A. Yes. But not, it's not just industry that's members of the National Safety Council. Government agencies; the Corp of Engineers is a member of the National Safety Council. It is, and continues to be today, a major source of information on safety.
Q. What's your reaction as a historian to a criticism of an organization in the 1930s on the grounds

that it was funded by industry?
A. In the 1930s -- and we've got to remember this is going back, Franklin Delano Roosevelt and the Great Depression. This was a time when the government was not funding these sorts of organizations. You could not look to the government for a Consumer Product Safety Commission telling you, telling businesses what they needed to do from a government perspective. There was nothing like that at that time, and yet, in the 1930s there was a crisis over silicosis. There were people developing silicosis working in industry. And businesses -- that, that was really a catalyst for businesses to form their own organizations to address the problem of silicosis.
Q. Dr. Neushul, you've also studied specifically the Owens-Illinois operation in relation to Kaylo. Is that right?
A. That's correct.
Q. Do you have opinions about the conduct of Owens-Illinois with regard to its Kaylo operation?
MR. McCOY: Your Honor, may I be heard on this?
THE COURT: Please approach.

(Whereupon a discussion was had by the Court and counsel out of the hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

THE COURT: An objection has been made and overruled.

Did you complete your question, Mr. Fischer?

MR. FISCHER: I believe I did, but I would very much appreciate -- let me ask the question again. Thank you.

Q. (By Mr. Fischer) Do you have opinions about the conduct of Owens-Illinois with regard to its manufacturing and sale of the Kaylo product?

A. Yes. In looking at that company within the context of that time, I feel their conduct was exemplary. And even moving to the current time, you look at the scientific studies that were done, publication of those studies and studies in the open literature, it is I think exemplary conduct.

Q. Dr. Neushul, I'm going to have you take a look at what's been marked as Owens-Illinois Exhibit 526.

Would you tell us what that is, please?

A. This is a copy of my, what's called a Curriculum Vitae, which is the description of when I got my various degrees and things that I've written and what sort of teaching I've done.

Q. It includes your publications and the other areas of your expertise. Is that right?

A. That's correct.

MR. FISCHER: Your Honor, we would move for the admission of the exhibit.

THE COURT: Mr. McCoy?

MR. McCOY: No objection.

THE COURT: All right. It will be admitted.

(Owens-Illinois Exhibit 526 was admitted into evidence without objection.)

Q. (By Mr. Fischer) I want to now move into some more detail about some of the things that you've talked about, Dr. Neushul, but not a great deal more detail.

What is a case report?

A. A case report, historically if a physician were

working on, in a hospital or working with a patient and saw something very, very unique -- I haven't seen this before. I'd like to write this up, write up a description of what I'm seeing -- say, it's a disease or a condition, and I'm going to try to get it published in the medical literature. You cannot, for example, write a case report of the common cold because that's not going to be publishable. It has to be something unique. And so a case report is something that turns out, indeed, to be unique because the journal says, you know, we're going to publish this.

Q. How does the development of medical knowledge use case reports?

A. If you see a large number of case reports appearing -- you know, we're seeing case after case of a rash appearing when babies use this particular diaper -- then someone may do a study; you know, look and see if they can duplicate those conditions in a study. So, a large number of cases or a number of cases will lead to further study; direct study, though, not just, gee, this is something new, I'll try and publish it.

Q. Is that what happened with mesothelioma?

A. You know, with Christopher Wagner's work, he looks at a group of cases, a large number, over 30

cases, and they're all showing the same condition, the same unusual condition and that's why the study is so pivotal, and really it's a, it's a big surprise. And he, this has been recognized by -- anybody that writes about this in subsequent years will always cite 1960 Christopher Wagner's paper because that is when we understood the connection between asbestos and mesothelioma.

Q. How can you tell in 2007 what was a, what was pivotal back in 1960 or some other year decades ago?

A. Well again, as a historian of medicine, I can go back and look at the papers that are cited the most. Even I, as a historian, the most important thing I've ever done is my work on penicillin and the only way I can say that is because people cite it a lot. They look to it a lot. They go, oh, Neushul wrote this paper, I'm putting it in my footnotes, over and over again. And there are, you know, we've got computers now. You can count the number of times that your papers are being cited.

In the case of Wagner that paper is cited over and over again, and the author is continually saying, this is when it began, this is when we understood this, and they cite Wagner. He's received --

he's passed away but he's received obviously awards and so on for his work in this field in recognition of his pioneering work.

Q. What do you see about citations to case reports?

A. You don't. A case report is the one data point. It's not a series of data points. You cannot make a conclusion from one data point and, you know, I think we can see that in all parts of our life. You can't make a decision based on one event. You have to see a pattern, okay? And that is what Wagner's work will establish. So, no, you don't see decisions made based on one event.

Q. How about when you go back and look at the historical records? Do you see contemporaneous, or do you see references to the case reports in other literature at the time the case reports appear?

A. If someone is writing a case report, they may -- they're saying it's unique but they may, they may, as part of the footnotes of their case report, say, look, I, you know, I have seen that this -- I want to give this the same name, this condition I'm seeing, because I've seen somebody else has done it, so you're going to do a literature search and see if what you're, what you're proposing as unique is part of a pattern. Of course, if it's the common cold, you know, it's not; you

know, that's a pattern that's already been established.

Q. When is it, in your opinion, Dr. Neushul, when is it that mesothelioma is linked to asbestos exposure?

A. I believe the link -- well, I know in the medical literature the link occurs with Wagner's paper in 1960 but there's going to be a lot of ensuing research. And in terms of the general public, it reaching a large number of people, it won't be until the mid-1960s or even later with the work of Irving Selikoff that you're going to see a true pattern, a true connection established.

Q. The jury saw earlier in the week the testimony from Dr. Hammar. Do you know who Dr. Hammar is?

A. I believe he's a contemporaneous -- obviously he's still alive -- a medical doctor.

Q. He showed some photomicrographs involving immunohistochemical staining.

A. Uh huh.

Q. Would a pathologist in the 1940s or 1950s have even understood what photomicrographs of immunohistochemical stainings are?

A. No. That's part of the -- I think, for example, if I'm looking at the history of this topic, I'm not going to talk to a doctor from now. Their job is to

give you the best data, to give you the best treatment now, okay? They weren't even alive when this earlier science was done; they certainly weren't in medical school. So I'm looking at a different kind of approach. It's a historical approach. I have to know what doctors felt then. They didn't have tools like that at that time, and to say today, oh, these guys were silly, they didn't see this -- which is a perspective that maybe a contemporaneous physician would take because they don't study history of medicine. There's really no point in them studying history of medicine. They need to be at the cutting edge, and yet, these events took place before they were born.

Q. Let's talk about asbestosis. How does asbestosis in the historical context compare to mesothelioma?

A. Well, within the historical context, asbestosis comes long before, as we've already discussed, mesothelioma. You know, this is a disease that emerges in the 1920s and is identified in the 1920s and into the 1930s.

Q. In the '20s and '30s what's the primary concern about asbestosis?

A. The concern in the '20s and '30s is keeping dust levels down because you know, you know in the '20s and

'30s you can go into a factory where they're manufacturing products containing asbestos and some of the people have no asbestosis at all. And they'll, you draw a connection between, well, there's a lot of dust in some areas and you're seeing some cases of asbestosis in those areas and not in others. So, is there a level of dust that we can use by controlling dust to prevent anybody from getting asbestosis, and they determined that there is.

Q. From a public health perspective why are doctors worried at that time about people getting scarring diseases in their lungs?

A. I mean, if you transport yourself back to that time -- I know it appears, you know, this is obviously the issue of the day that we're talking about. But you go back to the 1930s the lung disease of that time is, is tuberculosis. And that is -- you'll see that in, you know, these documents that you may have discussed earlier. You have 40,000 people a year dying of tuberculosis. It is a huge -- or more. It is a, it's a, it's a horrendous epidemic. And if you have scarring inside your lungs you are more susceptible to the tubercal cilia. We don't understand the tubercal cilia particularly well at that time but they certainly draw a

connection between silicosis in particular and the tuberculosis epidemic at that time.
Q. Are they concerned about asbestosis and its possibility to make tuberculosis worse?
A. Absolutely. In fact, in most, if you look back in most of the early cases, the person also has tuberculosis along with asbestosis.
Q. Is tuberculosis a big problem for us today?
A. Yes. Tuberculosis is reaching epidemic proportion again today, especially in Europe, because we now have drug-resistant strains of tuberculosis. I mean, all of us have had TB shots and so on, and that's a public health effort to prevent the disease. But, no, today there are drug-resistant strains. You remember the, a couple, some time ago there was an attorney who had drug-resistant TB and travelled to Europe and had to be brought back and kept in a very quiet place for some time because we, we take that very seriously. Drug-resistant TB is, it's a killer.
Q. Does lung scarring show up on x-rays?
A. Yes. You can and, you know, that's one of the methods that the, the industrial hygiene public health apparatus of that time would use. It would do x-rays of workers to see -- in fact, they did them before they

were employed. You want to be very careful not to employ someone who has TB at that time because -- and they, they knew this -- if you're in a dusty environment, you have TB, you inhale the dust, you cough out the dust, it has, you tend to find everybody else is getting TB in the working environment.
Q. Does it show up on the x-ray before or after the person has symptoms?
A. You know, in my interpretation of it, once the person begins to have symptoms, especially early, especially in these early years, you will begin to see it on the x-ray.
Q. What was the view in the 1930s and '40s about whether or not asbestos and asbestos-containing products could be used safely?
A. Well again, going back to those reports, you could go into a manufacturing facility and find that some people were having no asbestosis whatsoever; others were. And it was determined that you could create a safe environment if you remained, if you kept the air in that environment below the threshold limit valve of five million particles per cubic foot, and that's a number that isn't changed until the 1960s.
Q. Is there anybody in the '30s or '40s or '50s who

is writing in the published literature that asbestos cannot be used safely?
A. No. It's, again, the A.C.G.I.H. will publish this list of safe levels or threshold limit values every year. It doesn't change. This is an accepted, acknowledged industry that the product of which is, it's around us right now, it's throughout American society and industry, so it is, they do believe that they can continue to have a safe asbestos industry.
Q. Is anybody writing the published literature in the '40s or '50s that the asbestos TLV of five million particles per cubic foot ought to be lowered to some smaller number?
A. There's no, nothing in the published literature that says that the TLV should be lowered.
Q. Is there anything in the literature with regard to the petroleum industry that would indicate that asbestos, the belief was that asbestos could be used safely back in the '30s, '40s, and '50s?
A. There's a report within the petroleum industry that's generated in 1937 -- this is a year before the Dreessen report that I talked about earlier -- where they addressed a lot of different potential exposures to dust within that industry, but there's a specific

section that looks explicitly at asbestos, at the use of asbestos insulation on refineries and the dust levels that one might be exposed to at various parts of the refinery installing asbestos insulation. And this report was certainly, people that were a party to the report were part of the American Petroleum Institute which included all major petroleum refineries in the United States at that time. And this organization, the A.P.I., which we hear about today every day -- they're the ones that explain how gas, why gas prices are going up and down -- they date to World War I, and they have a safety phase of that and that is part of why this literature is generated.
Q. Was there anything in the published literature in the '40s and '50s about whether applicators of asbestos-containing pipe and block insulation faced an asbestos risk in their jobs?
A. There will be a, the largest study ever done -- and frankly that ever will be done -- of workers applying asbestos-containing insulation, that will take place in 1946 and these are insulators working aboard ships being mass produced for World War II by the Maritime Commission and by the U.S. Navy. We built more ships in that time than ever in the history of the

world. They could build a liberty ship in one day, bottom up, put it in the ocean. There was a survey of over a thousand insulators at that time. They found only three with asbestosis and determined that these particular individuals had a long-term prior exposure in the asbestos industry and determined -- and this is a study conducted by Philip Drinker, who's a renowned, probably the most preeminent dust expert of the 20th century, the inventor, recognized worldwide as the inventor of the iron lung, Harvard professor --

Q. Let me interrupt you there. We had some testimony earlier in the week about maybe Drinker wasn't really the inventor of the iron lung. What is your reaction to that? Apparently you've studied the record.

A. Yes. You know, as a historian I'm sort of saddened by that because, you know, that's -- the president of the United States contracted polio at that time. This was a huge epidemic, and it was an amazing engineering achievement by Philip Drinker to produce the iron lungs that enabled people with polio -- and some of us can remember, you know, what the impact of polio was on our society here. He's recognized throughout the world as the inventor of the iron lung. And so I, I guess we forget some of these things as we go through

history. But this, this study, the Fleischer-Drinker study is a definitive study and it finds that applying pipe insulation is, quote, a safe occupation.

Q. Let me just quickly --

MR. FISCHER: Your Honor, may I approach? I have some documents I would like Dr. Neushul to chat about with the jury.

THE COURT: Certainly.

Q. (By Mr. Fischer) Dr. Neushul, I've got four documents here. Could you just take a look at those, please?

A. (Witness complied with the request.)

Q. Did I ask you to look into the question of whether Dr. Drinker was, in fact, the inventor of the iron lung?

A. You did mention that to me and I, of course, already knew that.

Q. What are the documents that you have there?

A. Here is a, a headline from the Boston Harold dated September 22, 1931, and it's entitled 'Drinker and Shaw Win Medals For Invention of Respirator', and Drinker was working with another person at Harvard when he did this work. They used vacuum cleaner motors to -- remember, when you have polio you lose nervous control

over your, your body so you're just, you're going to suffocate so you have to breathe and they put you in a chamber and changed the air pressure using vacuum cleaner motors, and that's the basis for the iron lung.

There's a picture of an iron lung --

Q. Could I interrupt you for just one second? Let's make sure. Is it -- which Drinker is it?

A. This is Philip Drinker.

Q. Okay. Did he have a brother?

A. He did. His brother's name is Cecil Drinker. He's a very famous physiologist who also worked at Harvard University, along with his sister-in-law, Katherine Drinker; she also worked at Harvard.

Q. How do you know so much about the Drinker family?

A. Because I've been to Harvard and I've used Philip Drinker's papers. There is lots of correspondence.

Q. Are you sure it wasn't Cecil Drinker that was the inventor of the iron lung?

A. No, I'm absolutely sure that it's Philip Drinker.

Q. Okay. What are the other documents you have there?

A. Okay. Here is a paper, or an article in 1955 entitled 'First Iron Lung Drama Retold by Professor Drinker'. You go down about five lines, it's Professor

Philip Drinker of the Harvard School of Public Health, Inventor of the Drinker Respirator, 25th anniversary of the event. So this, by the way, is an example of primary documentation. This is a newspaper article. It's published in 1955. Nobody's going to go back and change this. It is what it is.

Here's a picture of an iron lung and it's an article with, dated 12 October 1928 and, you know, you can see a picture there of someone in an iron lung. I think there may still be some of these in use in the United States today.

This is a Hall of Fame Inventor Profile that has a picture of Philip Drinker and a detailed description of the impact of his invention and his biography and the dates of his life.

So those are these four documents. But if you do a literature search on any newspaper database, enter key words 'Philip Drinker', 'iron lung', you will be showered with articles on the topic.

Q. Okay. I'm sorry. I interrupted you. You were talking about the Fleischer-Drinker study and that Dr. Drinker was one of the authors of that study.

A. Yes. Philip Drinker is really the preeminent dust expert on dust disease in the United States at this

time. When you begin to do the amount of building that we did during World War II, you put thousands of people to work in an effort to, of course, win the biggest war in the history of the world -- you have to literally build more ships faster than the Germans can sink them -- so you have, all of a sudden, thousands of people working in dusty environments. The government turns to Philip Drinker and says, Do a survey of our shipyards, focus on dust. You know, we have a huge number of people working with insulation and we have specified that this insulation must, absolutely must contain asbestos.

Q. Doctor, let me, let me just ask you to tell us about the conclusions of the Fleisher-Drinker study.

A. The conclusion is that the occupation of applying pipe insulation aboard a ship is a safe occupation.

Q. When, if ever, was that conclusion challenged in the published medical literature?

A. That conclusion isn't going to be challenged until the 1960s with the work of Irving Selikoff. He will look extensively, not at this same number but at a large number of insulators in the 1960s and determine that it is not a safe occupation.

Q. Is there anything in the medical or scientific

literature between the time Fleisher-Drinker is published in 1946 and the Selikoff study that is in any way critical of the Fleisher-Drinker study?

A. No. The Fleisher-Drinker study stands alone for a long, long time. I mean, it's very rare even today to do a study of over a thousand people in a specific occupation, and so they find, you know, they found no, essentially no cases.

Q. Was Fleisher-Drinker published?

A. Yes.

Q. Was it published in a reputable journal?

A. Yes. It's published in the American Industrial Hygiene Journal.

Q. You mentioned Willis Hazard before. What's the connection between Willis Hazard and the Fleisher-Drinker study?

Well, first of all, tell us who Willis Hazard is. I'm sorry.

A. Okay. Willis Hazard is a Harvard graduate and a student of Philip Drinker's. He goes and studies at Harvard. He works with Philip Drinker. I think they had a very close relationship. When Drinker retires Hazard is invited to give a speech at his retirement party. They certainly corresponded with one another.

Really Hazard is building on what Drinker's report was and he's specifically very interested in dust. Hazard will be; obviously Drinker was. They have a relationship. They patented dust removal technologies together. They held at least two patents together. So they had a close working relationship, and certainly that's not unusual in a college environment for a professor to stay in touch with a student. But Hazard will stay in the industrial hygiene field and was certainly very much aware of Drinker's work during World War II and all of his work throughout his career. There are not that many people in the world who study dust as closely as people like Drinker and Hazard, and both are highly, you know, recognized in the field of industrial hygiene. They will both win, for example, the Cummings Award, which is the top prize that can be awarded in the field of industrial hygiene.

Q. Where did Hazard go after he leaves Harvard?

A. Hazard will work for Owens-Illinois in the early 1930s up until World War II and will work for the government. And afterwards, in 1946, he will return to work for Owens-Illinois, again as an industrial hygienist. In a sense the company, when they hire him, are getting a wealth of knowledge specifically about

dust and they're concerned with dust. They are a sand -- they are a company that deals with silica all the time. They're a glass company. And so they need, they want someone like Willis Hazard, who is very, very knowledgeable on the impact of dust and disease.

Q. Did Hazard read the Fleisher-Drinker study?

A. Of course he read the Fleisher-Drinker study.

Q. How do you know?

A. Well, first of all, you always read everything that your mentor writes -- I can tell you that from personal experience -- but, he's testified -- Hazard's passed away but he's testified on numerous occasions that, yes, I read the Fleisher-Drinker report.

Q. What did Owens-Illinois know in the 1940s and 1950s about whether or not asbestos was capable of causing the disease asbestosis?

A. Owens-Illinois knew that asbestos was capable of causing asbestosis, the medical community knew that asbestos was capable of causing asbestosis, and certainly Willis Hazard absolutely knew that asbestos could cause asbestosis.

Q. Asbestos can cause asbestosis. How were people protecting against asbestosis?

A. Well, they're taking the same approach that was

taken when the disease first began to manifest itself. They know that some people in a working environment in less dusty areas are not going to contract asbestosis. You need to maintain a safe dust level, a dust level below the threshold limit value, and you will not see the disease amongst workers.

Q. How, what specific methods were in common use in the '40s and '50s to keep the dust levels low?

A. Well, there's certainly ventilation; ventilation around grinding or sawing equipment that technologies, like roto-clones that will suck out massive amounts of air and deposit the dust in filter sacks. You could have respirator technology in areas where there's a possibility that a worker using a saw might momentarily be exposed to a level above the TLV; then, in that particular station, you might utilize a respirator technology.

Q. How about more basic things than those kinds of things?

A. There could be housekeeping procedures; you know, people moving through the plant on a regular basis insuring that the conditions, the dust never built up in the plant. You could have -- there is signage certainly warning people that, you know, you need to be clean, you

need to wear your respirator.

Q. How about wet down?

A. Wetting down, that's something that's mentioned as early as the 1930s directly related to the, to refineries. If you're going to be removing asbestos-containing materials or disturbing asbestos, if you use a fine, a fine sheet of water, if you spray water over the operation you're going to keep the dust down.

Q. Was asbestos considered a toxic substance in the 1940s and '50s?

A. No. In fact, on the list of threshold limit values there's lists of different dusts. There are toxic dusts and there are non-toxic dusts. Asbestos does not enter your bloodstream. Asbestos is not a poison. It's not listed as a toxin at that time.

Q. Would a product that contained a percentage of asbestos be considered toxic in the 1940s or 1950s?

A. I mean, it would depend on what else was in that product, of course, but, no, asbestos is not considered a toxic material at that time.

Q. In 1958 if an industrial hygienist wanted to go out and find the available literature with regard to the use of asbestos-containing products, what would that person find?

A. Well, I mean, you can -- I can do this today because you have indexes, industrial indexes from 1958. You can look and see what, look through the, look in the index for the word 'asbestos' or 'insulation' and there will be lists of articles that describe, you know, the product, its use, and so on.

Q. What would be the leading article they would find at that time if they went to look?

A. Is this in reference to a specific product or --

Q. No, in reference to the use of asbestos-containing insulation products in the field.

A. You know, certainly you would discover the Fleisher-Drinker report. You would see this was the most extensive study done of people using asbestos-containing products in the, it's published in 1946 and you would see that it is a, considered to be a safe occupation.

Q. How many asbestos-containing products were on the market in the 1950s?

A. Thousands.

Q. How many of them had warnings?

A. None.

Q. When do the first warnings appear on asbestos-containing products in the United States?

A. Well, we're going to become very concerned with asbestos during the mid-1960s starting with the work of Dr. Irving Selikoff in that he will become personally involved in alerting the public to the dangers of potential hazards of asbestos. That, of course, coincides with the environmental mood of the 1960s, the creation of agencies like the Consumer Safety Commission, government entities that would provide an avenue or promote the use of warnings.

Q. Mr. McCoy this morning showed a couple of documents involving correspondence with the Saranac Laboratory. What's the Saranac Lab?

A. The Saranac Laboratory is, or started as one of the leading centers for studying tuberculosis. In fact, the gentleman who I believe wrote the letter that he read, Dr. Leroy Upson Gardner, he had tuberculosis. He had a personal interest in studying the disease at the Saranac Laboratory. He was also the world's leading expert on silicosis. Of course, as we know, there's a connection between silicosis and tuberculosis. That laboratory was the leading laboratory in the nation, if not the world, for looking at dust-borne disease.

Q. What was the relationship between Owens-Illinois and the Saranac Laboratory?

A. Well again, Owens-Illinois is a company that's using a lot of Silicote. They make glasses, you know, tableware, bottles, almost -- they are the largest producer of bottles at that time. So they're very concerned with a potential for silicosis at their manufacturing facilities and they have a long-term relationship with the Saranac Lab to study the various products that they're using, the processes that they're using to insure that they're maintaining safety. This is not the, when they decide to make a product that contains Silicote and asbestos, it's not the first time that they've dealt with the Saranac Laboratory. That's part of their procedure.

Q. What's the purpose of the study that kicks off in 1943 that Mr. McCoy referred to?

A. Well, they've decided to go into a new industry. I think they're interested in finding out if the autoclave process -- the process in which they're heating up the sand, the silica, the asbestos, the ditamacious earth, the lime, the various components of what will become Kaylo -- if, when they heat it up, it changes the composition of those. Is the dust from the super-heated materials going to be a potential hazard after it's heated up?

Q. Mr. McCoy pointed to the document and said that because you're starting out with asbestos and silica you have all the ingredients for a first-class hazard. You heard him say that?

A. I have -- I heard that and I have seen the letter that he was reading from.

Q. Okay. What does that mean in 1943?

A. Well, in 1943 we knew that silica could cause silicosis. In 1943 we knew that asbestos could potentially cause asbestosis.

Q. So --

A. Certainly Dr. Gardner, being the world's expert on silicosis, knew that silica could cause silicosis.

Q. So why did they do the study?

A. Again, they're doing the study to see -- that is one letter in a long series of letters, a long series of reports, the final results of which are published in the open literature. They're trying to find out if the process will render these materials no longer dangerous at all and they're halfway, they're halfway right in that result, as I think was pointed out in a later documentation.

MR. FISCHER: Mr. McCoy, I'm looking for the exhibit that you used, the 1948 letter.

Thank you very much.

Q. (By Mr. Fischer) Okay. Mr. McCoy also indicated or read from a November 16, 1948, letter. Did you hear that?

A. I think I heard part of that. I was sitting in the back of the room so I did hear some of it.

Q. Okay. Well, the last sentence was after, the last sentence: 'Thus, the company, being forewarned, will be in a better position to institute adequate control measures for safeguarding exposed employees and protecting its own interests.' Are you familiar with that?

A. Yes.

Q. What are they talking about, 'institute adequate control measures'?

A. They're talking about insuring that within their workplace, which obviously they've been doing with silica because they're concerned about silicosis since the, virtually the, for many years with that company -- they're concerned that in working with these materials when you're manufacturing it that you insure that you're staying within a safe level. And, of course, they have Willis Hazard overseeing that process but they bring the Saranac Laboratory in, say, look, we want you

to bring your scientists out to our manufacturing facility and measure the dust levels, check our manufacturing equipment to make sure that we're staying at safe levels, and so Saranac will come out. Thomas Dirken will be one of the chief hygienists from Saranac Laboratory who will personally go out to the Owens-Illinois manufacturing facility and take dust measurements. They, Owens-Illinois -- and they have done this before -- but they also say, look, we would like you to evaluate chest x-rays of all of our workers on a regular basis to insure that none of them are developing asbestosis or silicosis.

Q. Did Saranac tell Owens-Illinois to stop selling Kaylo?

A. No.

Q. Did Saranac tell Owens-Illinois to take the asbestos out of Kaylo?

A. No.

Q. Did Saranac tell Owens-Illinois that Kaylo cannot be used safely?

A. No.

Q. Is there anything in the Saranac report about cancer?

A. In the final publication that's published --

actually the lab, Saranac Laboratory publishes it without the knowledge of Owens-Illinois but, you know, that's fine -- therein notes that there is, quote, no neo-plastic change seen in the animals that they're looking at.

Q. What does that mean?

A. That there's no cancer; they're not finding tumors or things in the animals that they've looked at.

Q. Was the Saranac study published in the open literature?

A. Yes.

Q. What kind of journal was it published in?

A. In the American Industrial Hygiene Journal.

Q. So it was available to everyone who was a subscriber to those kinds of journals?

A. Yeah. You can go to any university library that has a, especially ones with a medical school, you can pull it off the shelf and read it.

Q. What are your opinions about Owens-Illinois' attitude toward safety and health in the 1940s and 1950s as it applies to this Kaylo product and asbestos?

A. They employed one of the leading industrial hygienists of the, you know, of the 20th century there: He was a student of Philip Drinker's, Cummings Award

winner, published numerous papers, corresponded with all of the leading experts on dust throughout his career. He understood what asbestosis was. He understood how to create a safe working environment for their employees. He got this leading laboratory to come out to their facility, take dust measurements, evaluate regular chest x-rays. They had no incidences of asbestosis amongst their workers. To go to that extent and then have the results of the experiment, have them be published in the open literature, I think that within the context of that time is exemplary. It's very unusual because there's no government agency saying that you must do this, you must test all these products before you can put them out on the open market. That's not part of the way business was done at that time. There is no -- none of the agencies that exist now in post-1960s, '70s, this era, existed at that time.

MR. FISCHER: Those are all the questions I have for you, Dr. Neushul. Thank you.

THE WITNESS: Thank you.

THE COURT: Counsel, approach, please.

(Whereupon a discussion was had by the Court and counsel out of the

hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

THE COURT: At this time we'll break for lunch. In just a minute I'm going to turn you over to the charge of the bailiffs for lunch. They will again escort you to lunch. You will be going to the Candlelight Restaurant today.

As I've told you before, you may not yet discuss this matter among yourselves or with anybody else. Do not allow anybody else to discuss it with you or in your presence. Do not listen to any radio broadcasts or refer to any newspapers that might contain any information about this case.

With that, you are released for lunch. We will reconvene at 1:30.

(Whereupon the Jury was excused.)

(Witness excused.)

(Whereupon the following proceedings were had in open court out of the presence of the Jury.)

THE COURT: The jury is coming back at 1:30. We still have to talk about instructions. We still have to do -- we still have cross examination and potentially redirect. We have the jury instruction conference and changes that need to be made most likely to those -- it's going to take some time -- then we have, what, plaintiff is estimating maybe a total of two hours of final, of closing argument?

MR. McCOY: I would say more like an hour and a half.

THE COURT: Well, that's the initial but you will have some rebuttal, right?

MR. McCOY: Yeah. I think the total is about an hour and a half is what I'm saying.

THE COURT: Half an hour at the most, I mean, at least for the defense if it has two hours. I don't see any way we're going to finish up today.

MR. FISCHER: Right.

THE COURT: And my preference -- I will listen to what you all have to say. My preference is if

-- we don't want to do closing arguments today and have them come back and start deliberating on Monday, do we?

MR. FISCHER: No.

THE COURT: I assume we want to start out with the closing arguments Monday morning and do, then I will read the instructions and let them start right then. Is everybody agreeable with that?

MR. FISCHER: Yes.

THE COURT: Okay.

MR. CASMERE: The only thing I would say is that when we end today, I think we should tell the jury that the closings will be on Monday so that they know that we will be done on Monday or they will have the case on Monday.

THE COURT: Right, right. I agree, and we're going to go over one day more than what we thought we would.

MR. LARGE: When are we going to do the instructions?

THE COURT: Well, it looks to me like we're going to be done fairly early this afternoon so after we get done we'll send the jury home, take a little bit of time, and sit down and do our formal jury instruction conference and hash out whatever needs to be

hashed out then. That way you can have them all ready to go Monday morning.

MR. FISCHER: Sounds good.

THE COURT: All right. See you all at 1:30 unless there is something we need to discuss before.

MR. FISCHER: No, sir.

THE COURT: Okay.

(Whereupon a lunch recess was taken, after which the following proceedings were had in open court.)

(Witness resumes the witness stand.)

THE COURT: Are we ready to have the jury brought back?

MR. McCOY: Yeah, we're all set, Judge.

THE COURT: Okay. We're going to start with Mr. McCoy's cross examination. Is that correct?

MR. McCOY: Yes.

THE COURT: Okay. Let's bring the jury

in.

(Whereupon the Jury returned to the courtroom, after which the following proceedings were had.)

THE COURT: We're ready to resume testimony now. Dr. Neushul has retaken the stand and is reminded that he's still under oath and we're ready for cross examination.

Mr. McCoy?

MR. McCOY: Thank you, Judge.

CROSS EXAMINATION

BY MR. McCOY:

Q. Doctor, I just want to go back in time a little bit and before -- you were contacted by Owens-Illinois lawyers some time in the past to do work on asbestos cases, right?

A. Attorneys representing Owens-Illinois did contact me some time ago.

Q. Okay. About how long ago?

A. I think it was probably around 2000.

Q. Okay.

A. 2001.

Q. And before that time you did not have any kind of background in asbestos to speak of, right?

A. I had not ever focused on that topic before. I was aware of the topic as I've looked at American environmental history but I had never focused in detail on the topic.

Q. Did you agree to work for the Owens-Illinois lawyers then after they contacted you?

A. The attorneys contacted me and sent me material to read and it was primarily depositions with a lot of the older gentlemen who might, maybe they would be here in my place, people who had worked for Owens-Illinois like Lewis Hazard -- Willis Hazard, and had me look at those. At that point I wasn't aware whether they were working for a plaintiff or working for a defendant. Then I had a meeting with them and they talked to me about the possibility of commenting on the history of that topic.

Q. "They" meaning the Owens-Illinois lawyers?

A. These were attorneys who worked for or represented Owens-Illinois.

Q. Okay. And when was that meeting?

A. I believe, you know, we had a -- there was a

series of meetings that took place in 2000, beginning of 2000.
Q. Okay. And as a result of those meetings, what was your understanding about your role or your assignment?
A. Well, they were describing, or having me look at events that took place some time ago in the 20th century -- you know, fifty, as many as a hundred years ago -- and that's the period that I study. I look at the 20th century, and I thought, well, I certainly, I've looked at history of medicine during this period, I've looked at history of technology during this period, I've looked at American history during this period. I focus, a lot of my work is focused on World War II, which is, of course, very pivotal to this story --
Q. Doctor --
A. -- and so I --
Q. Doctor, I just kind of wanted you to give an answer to the question that I asked here.
Your assignment from the Owens-Illinois lawyers was to work on the asbestos cases. Is that your understanding?
A. It was to look --
MR. FISCHER: I just ask that the

witness not be interrupted.
THE COURT: Okay. If you recall the question, sir, you may begin your answer again.
THE WITNESS: Maybe you could -- could you repeat the question because I want to answer it accurately.
Q. (By Mr. McCoy) The last question was basically your understanding of your assignment was to provide testimony in connection with the Owens-Illinois asbestos cases. Is that right?
A. Eventually -- at first they were having me look at the historical documents. Then they discussed describing in testimony the context, the historical context of those documents or those events that took place with them.
Q. You may have to pull that microphone a little bit or lean forward or something. You're a little bit faint.
How much do the Owens-Illinois lawyers pay you?
A. If I'm doing research, reading depositions -- and that could be research that's specific to a site or to a specific topic -- I charge $150 an hour. If I'm giving testimony I charge $300 an hour.

Q. All right. And your appearance here today then is $300 an hour?
A. For the time that I'm giving testimony, yes.
Q. Over the time period going back to 2000, how much money has, have you received from the lawyers for Owens-Illinois?
A. It's difficult for me to say. When I began I didn't do very much work early on; in the last few years I've done a considerable amount of work. So, at least initially I might have made $20,000 in a year off of that work in the early years that I did it and of late that has increased.
Q. What did you get in the year 2007?
A. In 2007 I may have made in excess of $70,000.
Q. Is it fair to say that you've been paid over time at least $300,000 from Owens-Illinois lawyers?
A. If I were to look at that six-to-seven-year period it may well be as much as that.
Q. How many cases for Owens-Illinois are you working on right now?
A. Probably less than six. But there may be cases where I've been presented as someone that might testify that I'm not aware of so there may be more.
Q. Okay. Ones where you were named but you didn't

know it as a witness?
A. It's possible, yes.
Q. Have you ever refused to testify in a case for Owens-Illinois?
A. Not as of yet, no.
Q. And your work has all been asbestos cases for Owens-Illinois, right?
A. The work that I have done for attorneys representing Owens-Illinois has always dealt with this issue, the Kaylo.
Q. Is there any other work you've done for Owens-Illinois or its lawyers besides asbestos cases?
A. No.
Q. Fine. And just to clarify a couple things, I know you've given us your C.V. here, and your Ph.D. is in history, right?
A. Yes, my Ph.D. is in history.
Q. Okay. Master's is in history?
A. That's correct.
Q. Bachelor's is in history?
A. That's correct.
Q. Don't get me wrong. I mean, I like history. I'm a big history buff. I just want to make clear that's your educational background. You're not trained and

schooled as an industrial hygienist. Is that right?
A. I'm not trained as an industrial hygienist but I am trained in the field of history of technology and I do study history of medicine, and industrial hygiene would fall within both of those fields so I can certainly use the tools from my field as a historian to look at the history of industrial hygiene.
Q. But you've never been out actually in the field and done the kinds of things that an industrial hygienist would do to sample air or to test exposures or those kinds of things, right?
A. I have looked at the history of that practice and how it has evolved over time looking at old publications within the field of industrial hygiene. Of course the way they do that now differs from the way they did it earlier in the century.
Q. My question was: Have you ever been out in the field and practiced industrial hygiene, sampled exposures and so on?
A. No, I'm not a practicing industrial hygienist.
Q. Basically you've just read some industrial hygiene materials, right?
A. Well, I've interviewed industrial hygienists from this prior time -- not current ones. I'm not

particularly interested in current industrial hygiene. I'm looking at industrial hygiene at the turn of the century and beyond, so I've talked to individuals from that period, I've looked at their correspondence, I've looked at their publications. Again, as a historian what I'm looking at is what it was like then. I'm not looking at it now.
Q. Doctor, have you -- you're not a medical doctor either, right?
A. Well, you read my C.V. I'm a historian. I have what's called a Ph.D., not an M.D.
Q. And same thing: Your knowledge of medicine is from a historical perspective. Is that fair?
A. I look at medicine from a history of medicine. The sorts of journals that I would publish in are not medical journals. They're history of medicine journals.
Q. Have you been -- do you have any information about what Ray -- you understand this is the case of Raymond Tedford, right?
A. That's correct.
Q. Have you been provided information about Raymond Tedford's work, what he did at Texaco?
A. I have not been provided any information on what Mr. Tedford did at Texaco.

Q. Have you worked on some oil cases involving, or history involving oil refineries before?
A. Yes, I have.
Q. So you've got some background in that, right?
A. I've visited oil refineries. I've looked at the plans for oil refineries. I've interviewed industrial hygienists that worked in oil refineries. I've done a lot of work in oil refineries.
Q. So you're aware of turnarounds?
A. That's correct.
Q. And you know those are events that are, regularly occur and are foreseeable in the oil industry, right?
MR. FISCHER: Objection, Your Honor. Calls for a legal conclusion.
THE COURT: Sustained as to the form of the question.
MR. McCOY: I'm sorry?
THE COURT: Sustained as to the form of the question.
Q. (By Mr. McCoy) Doctor, you are aware that turnarounds are regular events in the oil industry, right?
A. I've seen the term turnaround used to describe maintenancing of a part of a refinery; not the entire

refinery at the same time but they'll do it in phases in different parts of the refinery.
Q. Okay. And you're aware that that, those kinds of turnarounds would be going on year after year at refineries, right?
A. In order to maintain the safety of the refinery to keep it -- these are places that can be very dangerous. They have to be, yes, they have to be maintained regularly and insulation is an integral part of that.
Q. When -- you've done some study you said on the history of the Kaylo product, right?
A. That's correct, yes.
Q. And you have done some, or have gotten some information and done some research on what applications for which Kaylo was marketed, right?
A. I've looked at advertisements like the ones that you've displayed earlier this morning. I've looked at, I've tried to look at as many of those as I can. For example, there was a list of locations for those at the bottom of the advertisement that you were showing; I've gone and looked at all of those. It had a limited marketing campaign but what's available is available and it's all published.

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Q. And you're aware that Owens-Illinois, one of its markets was, or applications was the oil industry, right, the oil refineries?
A. Certainly that was one of the applications that they anticipated being applied at.
Q. As I understood what you said, there was information about asbestosis that was fairly well established by even in the 1930s. Is that accurate? I don't want to misstate your words. I just want to get a time reference.
A. Well, if you do a literature search you will find publications in the 1930s. I discussed, for example, the Dreessen report. We discussed the Merewether report. These are published in the open literature and contain information on asbestosis from the 1930s.
Q. And that connection was fairly well established in the literature, asbestos and the disease asbestosis, by sometime in the 1930s, right?
A. Certainly by 1938 when the Dreessen report is published here in the United States there was awareness that there's a connection between asbestos and scarring inside your lungs, or asbestosis, potentially.
Q. And in the history of the Kaylo business -- I'm going to use my chart.

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In the history of the Kaylo business, Doctor, Owens-Illinois first started a pilot marketing program for Kaylo in, what was it, about 1943?
A. My understanding was that Owens-Illinois began marketing and selling Kaylo between 1948 and 1958.
Q. That was on a full-scale basis, production basis, right?
A. I don't know that they ever went into huge scale production. They had two facilities for making it. It was never a major market component that I know of compared to other insulations but the dates that they made it were between 1948 and 1958 in Berlin, New Jersey, and Sayreville, New Jersey.
Q. Okay. Those were two factories Owens-Illinois had at those two locations?
A. Those were the two factories that manufactured products, the Kaylo products.
Q. Okay.
A. There's roof decking and door core and pipe insulation.
Q. Right. In this case we're only going to be concerned about the block and the pre-formed half rounds that would go on the pipe covering.
So if I understand this, you said 1948 to

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what year was the Kaylo production?
A. 1948 to 1958.
Q. Is that April, end of April, '58, right?
A. I believe in April 1958 they are no longer in charge of manufacturing Kaylo.
Q. All right. And you said 1938, by 1938 Dreessen had established asbestosis, right?
A. You can go back, probably if you want to look at British literature you can go back to earlier.
Q. Let's just stay with Dreessen.
A. Yeah, by 1938.
Q. U.S. literature, Dreessen.
A. That's right. And Dreessen's paper will establish the five million particles as a level which is termed as safe.
Q. Doctor, Owens-Illinois had some medical and industrial hygiene personnel that -- I know you made reference to Mr. Hazard as the industrial hygienist for Owens-Illinois, right?
A. That's correct.
Q. And I know you, you explained his, his excellent credentials that he had. I think he went to Harvard, right?
A. That's correct.

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Q. Okay. And when did he start working for Owens-Illinois?
A. He started working for Owens-Illinois I believe in 1934.
Q. 1934?
A. That's correct.
Q. Is it Mr. Hazard or Dr. Hazard?
A. It's mister.
Q. Mister?
A. Mr. Willis Gilpin Hazard.
Q. Right. So he was an industrial hygienist from Harvard?
A. Yes.
Q. And then, and then -- so he was on there -- he was working for Owens-Illinois throughout the time of the Kaylo production, right?
A. Well, he'll leave Owens-Illinois during World War II and work for the government during the war but will return in 1946. So he will be with Owens-Illinois throughout the production period, but, if you recall from our earlier discussion, the experiment that was done at Saranac Lake Laboratory took place before they went into production. That's in 1943 and onwards.
Q. Yeah. There was the research on the Kaylo

starting at least by 1943, right?
A. That's correct.
Q. It's getting a little crowded on there. We need to spread it out a little.
Okay. So, there's another, there's a medical director over at Owens-Illinois, also, during at least some of this period of time, right?
A. Dr. Charles Shook.
Q. Okay. When did Dr. Shook start working for Owens-Illinois?
A. I believe he started in 1946; it may have been earlier than that. He was a distinguished physician for the U.S. Army during World War II but I don't think he had a connection with Owens-Illinois before the war but I'm not absolutely sure of that.
Q. And he was a licensed medical doctor, right?
A. He is a medical doctor.
Q. And I assume he's also a respected person within the, within the medical community, right?
A. I've looked at his career and he was a very highly respected physician.
Q. Right. He'd be, he would be a knowledgeable physician, right?
A. Yes.

Q. Okay. And he was medical director for all of the Owens-Illinois company, right?
A. As far as I know, he was, yes. They also had physicians on site. You know, he was not the only physician working for Owens-Illinois. They had other physicians at their factories and they also had nurses at the factories.
Q. Right. And Dr. Shook, he was also copied even on some of the Saranac documents about the Kaylo testing, right?
A. If you look at the, at the footnote at the bottoms of some of the letters I believe he is CCd on some of them.
Q. Okay. So both Mr. Hazard and Dr. Shook are aware of what's going on with the Kaylo testing, right?
A. They are certainly staying up with that research that the company is paying Saranac Laboratory to conduct.
Q. They both would have known that in 1938 there was that Dreessen report about the asbestos causing problems, right, the asbestosis? They both would have, they both would have been aware of that, would you agree?
A. In 1938 the medical community, including them,

was well aware that exposure to asbestos could cause asbestosis.
Q. Doctor, Owens-Illinois, knowing about the Dreessen report and I think you said that set forth -- and that's, that's the 1938 report, right?
A. Dreessen was published in 1938, yes.
Q. Okay. And I believe that was the start of that standard you said of the five million particles per cubic foot, right?
A. Certainly that will be a source that the A.C.G.I.H., the American Conference for Governmental Industrial Hygienists, will look to when they're making a list of materials in establishing initially maximum allowable concentrations, but that term will later turn into threshold limit values, of which there's ones for other materials other than asbestos. There's one for lead. There's one for silica, which is the same five million particles per cubic foot. And so that paper in 1938 will certainly be a source that the committee, the Threshold Limit Value Committee of this organization will look to.
Q. Right. And that's, that five million particle per cubic foot standard, Mr. Hazard would have been aware of that, right?

A. Mr. Hazard certainly would have been aware of that, yes.
Q. Dr. Shook would have been aware of it?
A. I'm sure he was probably aware of it, yes. It was put in the published literature. It's put out every year.
Q. Fine. And Mr. Hazard, he's an industrial-hygienist trained at Harvard so he could have -- the industrial hygienists, they are the ones who measure the levels of exposure to see whether these standards are exceeded, right?
A. That certainly could be part of their function.
Q. All right. And Mr. Hazard could have set up that program for Owens-Illinois' Kaylo along with Dr. Shook to test whether or not certain activities like cutting, sawing, sweeping, shovelling could have been above that five million particles per cubic foot with Kaylo. They could have done that, right?
A. Well --
THE COURT: Just a second, sir.
MR. FISCHER: Thank you, Honor. We object. Calls for speculation and argumentative.
THE COURT: Sustained as to form.
Q. (By Mr. McCoy) Dr. Neushul, an industrial

hygienist such as Mr. Hazard could have set up a testing program to see whether Kaylo exceeded the five million particles per cubic foot standard in some of its uses and applications, right?

MR. FISCHER: Objection.

THE COURT: Just a second, sir.

MR. FISCHER: Objection. Calls for speculation.

THE COURT: Overruled. He can answer if he knows.

THE WITNESS: Well, I don't, of course don't want to speculate but we know that they engaged the nation's leading dust laboratory to come out and do exactly that: An independent group of industrial hygienists were employed from the Saranac Laboratory to come out and look at every phase of the Kaylo process to insure that it was remaining within safe levels, within the TLV.

Q. (By Mr. McCoy) Doctor, my question was simply Mr. Hazard could have set up a program to test whether certain Kaylo activities or uses would have exceeded that five million particle per cubic foot standard. Is that true?

A. Well, I just -- he did.

Q. Okay. So he did. All right.

Now you said he did it for the Owens-Illinois -- what, what -- somebody did it at a plant of Owens-Illinois. Is that what you said?

A. Saranac Laboratory came to both of their plants.

Q. Well, it was done at a plant -- that was just my question -- right?

A. They only have two plants.

Q. Okay. Done at an Owens-Illinois plant, right?

A. At the two plants.

Q. Okay. What about out in the field? It was never done out in the field, testing for what the exposures would be for the Kaylo, right?

A. Well, the study --

Q. Doctor, was it done out in the field or not?

A. The study that took place in 1946 of over a thousand --

MR. McCOY: Your Honor --

A. -- applicators --

MR. McCOY: Your Honor, please. I've asked the witness a specific question, Your Honor. I need an answer to that question.

MR. FISCHER: Can we approach?

THE COURT: Okay. Approach.

(Whereupon a discussion was had by the Court and counsel out of the hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

MR. McCOY: Do you want the last question, should I have that last one read back?

THE COURT: No, but I will have the last question read back.

All right. Miss Ackman, would you please read back the last question?

(Whereupon the question found on page 79 at line 15 was read back by the reporter.)

THE WITNESS: My answer to that would be that, yes, it was done out in the field by Philip Drinker during World War II in 1946 in the study of over a thousand insulators and it was determined at that time that that was a safe occupation. There's no need. Willis Hazard, we know, was very familiar with that

operation as were the dust experts at Saranac, the independent laboratory that came and tested it on site, so that data that was already available.

MR. FISCHER: Your Honor, I think we lost the microphone.

THE COURT: Okay.

Q. (By Mr. McCoy) Okay. What I'm asking you, Doctor, is did Owens-Illinois with Mr. Hazard or Dr. Shook set up a program to test out in the field what the levels of exposure to Kaylo were during the operations of cleaning up Kaylo such as putting it into a wheelbarrow with a shovel? Was that done?

A. That study was not done. That data was available in detail from a World War II study that took place in 1946 before Owens-Illinois produced asbestos-containing Kaylo.

Q. And we'll get back to some of the other studies later but it was not done by Owens-Illinois' people, right?

A. The study in 1946 was done by Philip Drinker who is the preeminent expert on dust in the United States.

Q. And was there any study done by Owens-Illinois to see what the levels of exposure were in conditions that looked like a snow storm removing Kaylo during a

turnaround at an oil refinery?
MR. FISCHER: Objection, Your Honor. Foundation and argumentative.
THE COURT: Sustained.
Q. (By Mr. McCoy) Assuming, Doctor, that the conditions during an oil refinery turnaround look like snow from the removal of the Kaylo pipe covering and block, did Owens-Illinois do any study to determine whether those levels exceeded the TLV standards?
MR. FISCHER: Objection, Your Honor. May we approach?
THE COURT: Okay. You may approach.

(Whereupon a discussion was had by the and counsel out of the hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

THE COURT: The objection to the question is sustained.
Q. (By Mr. McCoy) Doctor, are you aware that Owens-Illinois did any study of the level of exposures

to Kaylo pipe covering and block during the turnaround conditions where there was removal of the insulation?
A. The only study that comes to mind that looks at that was not performed by Owens-Illinois. I know that there was a study performed by Roy Bonsib of Standard Oil that looked explicitly at dust from removal of insulation and installation of insulation at a refinery, and that's in 1937.
Q. Right. Okay. That's called the Bonsib Report?
A. It's a report by Roy Bonsib, yes.
Q. I have a copy of that report here. This is something you've had a chance to review before?
A. I have looked at this report before, yes.
Q. Okay. I have some questions on it, so --
THE COURT: What is the marking on that?
MR. McCOY: I didn't put an exhibit number on this but we could put our next number on it. That would be 66.
Doctor, if you'll give me the first page of your report I will put a marking on that. Okay.
Q. (By Mr. McCoy) Exhibit 66 is titled Dust Producing Operations in the Production of Petroleum Products and Associated Activities, and this is a study, it says A Medico-Safety Survey by Roy Bonsib, right?

A. That's correct. And he's the Chief Safety Inspector, and it's ineligible after that, Standard Oil Company.
Q. And it's 1937, right?
A. It is. And there's a foreword by the General Medical Director of Standard Oil Company as well, Willard Denno, D-e-n-n-o.
Q. This is a document which I think Mr. Hazard certainly would be aware of. Is that right?
A. I think Mr. Hazard was, may well have been aware of this. He certainly knew Roy Bonsib so it -- I don't recall whether he states explicitly that he had read this or not but he may well have been aware of it.
Q. And the information reported in here you said would be something that could be relied upon by Owens-Illinois in terms of levels of exposures to products, right?
A. Well, it's a very thick report. There's a small section of it that deals with dust related to removing asbestos insulation or insulation containing asbestos, so it is certainly a resource that was available for data on that.
Q. For turnaround exposures, right?
A. I don't know that they're explicit in saying it's

during a turnaround, but they do talk about installation and removal of asbestos.
Q. Types of work that would go on in a turnaround, right?
A. It may have taken place during a turnaround.
Q. So let's go to page 27.
A. (Witness complied with the request.)
Q. Did you find it? I'll help point you to the parts I'm thinking about here. Got it?
A. Yes, I'm on page 27.
Q. Okay. And that's titled Section III, Insulating Operations, right?
A. That's correct.
Q. Okay. And then if we go down to Part B there -- are you following with me here? Do you see it down there at the bottom?
A. Yes.
Q. Okay. That's titled, What are the Principal Insulating Operations and How Much Dust is Produced During Such Operations, right?
A. That's correct. And they note after that that, 'There is, of course, a wide variation in the amount of insulation work and the amount of dust produced.'
Q. Yeah. And they go on to say, [A few examples,

however, will give a good general idea ', right?
A. That's correct.
Q. Okay. So first example they cite is insulating 12-inch steam lines, right?
MR. FISCHER: Your Honor, can we approach for a minute?
THE COURT: Okay.

(Whereupon a discussion was had by the Court and counsel out of the hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

Q. (By Mr. McCoy) Doctor, so staying with this Exhibit B which gives us the example of the insulating operations -- you see that part, right?
A. You're talking about B on page 27?
Q. Right. There is an example down there for insulating 12-inch steam line using block insulation, right?
A. Blocks of 85 percent magnesia insulation, which means they are 85 percent magnesia and 15 percent

asbestos.
Q. Okay. And those blocks produced exposures it says 'as high as 18,124,800 particles of less than ten microns per cubic foot', correct?
A. That's correct. But you have to note that 85 percent of that material is magnesia and 25 percent is, or, sorry, 15 percent is asbestos.
Q. Right. And you understand from your brief knowledge of the Kaylo that Kaylo block and pipe covering contained between 13 and 20 percent asbestos, right?
A. That's correct.
Q. So Bonsib's got 18 million on steam line block, right? About three times the TLV, correct?
A. No, that's not correct.
Q. Go, go ahead and explain what you're talking about.
A. Well, there's -- the TLV for a mixture that is not entirely asbestos is fifty million particles per cubic foot and so this is well below that particular standard for a total dust.
Q. Well, the standard was originally one of total dust, right?
A. The standard for asbestos dust is five million

particles per cubic foot. The standard for total dust is fifty million particles per cubic foot.
Q. The original standard was five million particles --
A. The threshold limit value for asbestos dust and asbestos dust only is five million particles per cubic foot.
Q. All right. So we'll continue on here for a moment. The, the study of the asbestos exposures that you're talking about at the Owens-Illinois plants, when was that done? When was that one done?
A. Are you talking about the study that Saranac Lake was employed to do of the manufacturing operations?
Q. Right.
A. Okay. That was done as part of the study that took place between 1943 and 1952 at the Owens-Illinois plants. I believe that was an ongoing study because they are looking at x-rays annually but I believe that took place I believe late in the 1940s.
Q. And then there is a later study, right?
A. There may be more than one survey that's done by Saranac.
Q. There was a study done in the late, about 1958, right, about the time the business was sold?

MR. FISCHER: Object to the form as vague.
THE COURT: Overruled. The witness may answer if he knows.
THE WITNESS: There may have been a study done after the plant was, no longer belonged to Owens-Illinois.
Q. (By Mr. McCoy) All right. Let's talk about these TLVs for a moment and we'll come back to that other study later.
The, the TLVs, these are not fine lines for whether someone is going to get disease or not get disease or not, right?
A. The TLVs are described as guidelines and people can get asbestos-related diseases below the TLV, right. It was believed that they picked a very low number believing that if you stayed below the TLV you would not get asbestos-related disease.
Q. Well, what the TLV book says, though, is they are not fine lines to determine safety, right?
A. They've picked a low number, and it is a term, not a fine line but a guideline.
Q. You mean there is no literature that says people never get sick for, from exposure below the, the TLV?

Is that true?
A. This particular literature that you're talking about, the TLV list is a guideline. That is not going to be revised until the late, until the 1960s so it's accepted as a level below which you were not going to get asbestosis.
Q. Well, my question, Dr. Neushul, is the literature that we're talking about through the end of 1958, there is nothing in there that says no one will get sick if the exposures are below the TLV, right?
A. I have seen no published literature saying that the TLV is ineffective in the time that you're describing about.
Q. The TLV in place was one for asbestosis, right?
A. Certainly that was their concern and they came up with a threshold limit value because we don't want people to get asbestosis. We're looking at factories. Some people are in industrial areas of the factory and some people are not in the industrial areas of the factory, which means you could conceivably find a level where nobody is going to have a case of asbestosis and that was the reason for implementing a threshold limit value.
Q. All right. Let's -- I want to talk for a moment

about the Dreessen report. This is one you mentioned, right?
A. Yes.
Q. Okay. This one is Plaintiff's Exhibit Number 67. It's the Dreessen report, right?
A. Yes, this is the report by Waldemar C. Dreessen published in 1938 as Public Health Bulletin Number 241.
Q. Okay. And in this document, I want to talk for a moment about the beginning, early on section of this. Page one. Can you find that?
A. Page one? Yeah.
Q. Yeah?
A. Yes.
Q. And this states in here -- and I'm talking about the third paragraph now. Do you see it?
A. Yes.
Q. Okay. It begins, 'The first record of a case of asbestosis seems to have been made by Montague Murray in 1900. The first complete description of the disease and of the 'curious bodies'', that's in quotes, 'seen in lung tissue and sputum appeared in 1927 when Cooke and McDonald reported two cases of asbestosis and listed the reasons for believing that asbestosis bodies originate from asbestos fibers that reach the lungs.' Did I read

that one right?
A. Yes, you did.
Q. Okay. So is it fair to say that at least by, at least according to Dreessen, that at least by 1937 that it was thought that asbestos fibers could be reaching the lungs to cause disease, right?
A. Well, these are the case studies that I mentioned earlier. They will prompt Dr. Merewether to do a more complete study and, of the textile industry and that will lead to dust control and full measures being taken.
Q. All right. So, just in answer to my question, Dr. Neushul, is it accurate to say Dreessen is stating that the reasons for believing that asbestosis bodies originate from asbestos fibers that reach the lungs was reported as early as 1927?
A. That's correct by Cooke.
Q. And he says a 'complete description ', right?
A. Yes.
Q. So if we take 1927 and put in that Cooke --
A. That's correct.
Q. -- asbestosis bodies reach the lung.
A. He's the one that describes the, quote, curious bodies, end quote.
Q. Okay. And it goes on to state -- do you see that

part that begins with 'Hoffman'?
A. Yes.
Q. Okay. 'Hoffman appears to be the first American to call magnitude of the asbestosis problem. In 1918 he reported 13 deaths from asbestosis had occurred among asbestos textile workers and about the same time Pancoast, Miller and Landy reported on 17 cases of asbestosis', right?
A. That's what it says here, yes.
Q. So death had been reported as early as 1918, right?
A. That's correct.
Q. From asbestosis?
A. I don't have that report in front of me and so I don't know the specifics of it. It's possible that there may have been other complications involved there. As I mentioned earlier, it was very common for people who had asbestosis, or had silicosis who also have tuberculosis. In fact, one of the things that prompts Merewether to conduct his study is that he will see a case from Scotland from a gentleman by the name of Seiler -- S-e-i-l-e-r -- that comes after the Cooke reports where the person has just got asbestosis and has no TB.

Q. Doctor, can we rely upon what Mr. Dreessen says, that Hoffman in 1918 was the first American to call attention to the magnitude of the asbestos problem? Can we rely on that statement?
A. I think certainly it says what it says but we might want to look at Hoffman to see if there were any extenuating circumstances.
Q. And in the next sentence Dreessen talks about death, right?
A. He talks about, he cites Pancoast, Miller and Landy as reporting 17 cases of asbestosis.
Q. Now, if we go forward in time from here, then we have the Dreessen report itself, 1938, right?
A. That's correct.
Q. Okay. And Dreessen concludes about the need for protection to keep the exposures below that five million particle per cubic foot standard, right?
A. Well, Dreessen is asked to do this study by the State of North Carolina and the reason for that is North Carolina is the state where this industry is beginning to emerge, the textile industry utilizing asbestos. He concludes the study and at the end will recommend if you keep conditions below five million particles per cubic foot you can avoid cases of asbestosis developing. But,

of course, there is a second part of this report similar to the Merewether one which looks at the engineering that has to take place in order to insure that you keep dust levels down in the manufacturing environment.
Q. Are you finished? I didn't want to cut you off.
Doctor, if, so he -- if we go to the end of the Dreessen report, it's page 117, right toward the end there. I don't want to rush you. Just kind of jump ahead because I've got it marked in mine. Did you find that part?
A. Yes.
Q. Okay. So he talks about dust concentrations needing to be kept below five million particles per cubic foot, correct?
A. That's correct.
Q. He doesn't say just asbestos. He says just general dust concentrations, right?
A. Well, he's saying that --
Q. Doctor, he says dust concentrations, not asbestos dust, right?
A. He, he's saying that but he, in the factory that is weaving pure asbestos that is what the dust is.
Q. Okay. So it's a five million particle per cubic foot dust concentration talked about.

A. That's what he stated here, yes.
Q. And if we go forward in time -- oh, I have something else I wanted to ask you about this document while I'm here. I think you said something about there was limitations on ability to analyze tissue under microscopes back during this time period.
A. I didn't say anything about that.
Q. So what you're saying is I guess here it could have been done. They could have looked at more tissue types and so on back then?
A. They -- well, there is some illustrations here of lung tissue. I don't know whether they're describing looking at them with microscopes, whether they're using refined staining methods the way they might today. I don't know. I don't think so but I don't know.
Q. So at least in the Dreessen report, that kind of pathology findings talked about is something that could be done, right?
A. You will have to show me the section in this that talks about that. If you want me to read it I would be more than happy to.
Q. My question on this section is about the -- it's on page, I think it's 99. It's got a section on pathology, right?

A. There is something, a section on Microscopic Appearance.
Q. Actually it's 96. And in that time period he's talking about -- if you go a paragraph or two into there -- about asbestos bodies, right?
A. Do you want me to read it, this section halfway down the page (indicating)?
Q. Yeah, I'll read it. I just want to make sure you found the section.
A. Well, the section that you have marked is the one you want me to read from?
Q. Yeah, it talks about asbestos bodies being found in almost all parts of the pulmonary tissue.
A. That's what it says. It says, 'Asbestosis bodies are found in almost all parts of the pulmonary tissue. They occur most frequently in the areas of fibrosis and are accompanied by a greenish black pigment.' And it continues on and it says, 'They are also noted in the connective tissue about the small bronchi, in the alvelor walls and in the alveoli.' Sorry.
Q. Alveoli, right?
A. That's what it says. I think the pigmentation you're talking about here is not the same as what Dr. Hammar was referring to, if that's what you're

asking me about.
Q. Okay. And it talks about another brownish-yellow pigment and so on, right?
A. Yes, that's correct, but these -- they are not being used to stain slides. They are appearing in the body.
Q. All right. Certainly, though, Dreessen is reporting that you can't find these asbestosis bodies back then, right?
A. So was Cooke back in 1927.
Q. We can put that down. I think we're done with Dreessen.
You talked about the National Safety Council, right?
A. I believe I mentioned the National Safety Council. This is an organization that was started around the turn of the century to promote safety in the work place, in the home, and throughout, you know, our environment.
Q. Owens-Illinois, through Mr. Hazard, would have been aware of the National Safety Council materials?
A. They were the founding member of the glass section of the National Safety Council.
Q. "They" meaning Owens-Illinois?

A. Owens-Illinois and Hazard, chair.
THE COURT: And who?
THE WITNESS: Mr. Willis Gilpin Hazard, the industrial hygienist from Owens-Illinois, was chair of that glass committee. He was the head of that committee. They are the major bottle producer in the country at that time and so they were interested, obviously we know from Hazard's career, in safety and they started that part of the National Safety Council.
Q. (By Mr. McCoy) All right. National Safety Council issued regular publications, right?
A. They did. They had a magazine called Safety News and they also had proceedings and, from their annual meetings where people from each of the different sections of the council would give presentations; for example, there is a petroleum section of the Safety Council where people like Roy Bonsib, who we were talking about earlier, would talk about safety at refineries.
Q. Okay. Our next number is 68. Okay. This one is Plaintiff's Exhibit 68. This is one from the National Safety Council, right?
MR. FISCHER: Bob, could I have a copy?
Q. (By Mr. McCoy) That's the National Safety

Council publication, right, Doctor?
A. Yes, it is.
Q. Okay. And what's, what's that one titled?
MR. FISCHER: Judge, I object until I have a copy.
Thank you.
THE COURT: You may proceed.
Q. (By Mr. McCoy) What's that one titled, Doctor?
A. This is titled Dusts, Fumes and Mists in Industry, and I don't see the date of it.
Q. It looks like down at the bottom it's got a 1943. Do you see that down there?
A. I'm unsure whether it's a 43 or a 63. But there is a date -- it's just not discernable -- at the bottom.
Q. Okay. I will represent that that's a 1943.
MR. FISCHER: Could I approach, please?
THE COURT: You may.

(Whereupon a discussion was had by the Court and counsel out of the hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

THE WITNESS: Do you want me to comment on that?
MR. McCOY: No, I'll withdraw that.
THE WITNESS: I would be happy do that.
MR. McCOY: I think I made a mistake on the date.
THE WITNESS: I think you did.
MR. McCOY: Right. I apologize.
THE COURT: Mr. McCoy, I want you to go ahead and take a minute and collect your thoughts.
Let's don't take a full-fledged break, but if you all would like to stand up and just refresh yourself for just a minute or so.
MR. McCOY: Could we approach?
THE COURT: Certainly.

(Whereupon a discussion was had by the Court and counsel out of the hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

THE COURT: Okay. I tell you what.

Let's go ahead and take a full-fledged break. We'll take about a ten minute break and we'll resume in about ten minutes or so.

(Whereupon the Jury was excused, after which the following proceedings were had in open court.)

THE COURT: Mr. McCoy?

MR. McCOY: Yes. I wanted to say, Judge, that this witness, if he's allowed to continue to go on and on and on, if he's allowed to go on and on and on with every answer like he's been doing I cannot conduct an effective cross examination of this witness and I'd ask for, you know, Your Honor to advise that he should answer my questions and I would make that request again so we can have an effective cross examination and get done with this.

THE COURT: Okay. And I told you during an earlier side bar, if he gives you an answer which is not responsive, ask me to strike it. If I agree that it is not responsive, I will strike it and I will then instruct the witness to answer the question.

MR. McCOY: Okay.

THE COURT: There have been some occasions which, had that been asked, I would have done that.

MR. McCOY: All right.

(Witness excused from the witness stand.)

(Whereupon a short recess was taken, the witness resumes the witness stand and the Jury returns to the courtroom, after which the following proceedings were had in open court.)

THE COURT: Okay. I think we're ready to resume.

Mr. McCoy?

MR. McCOY: Thank you, Judge. This time I'll get the dates right. I apologize.

Q. (By Mr. McCoy) Exhibit Number 44. Doctor, is this an abstract from the Industrial Hygiene Digest?

A. It appears that it is, yes.

Q. Okay. And this is one from August 1949, right?

A. It appears that it is. I can't discern the date at the upper right-hand corner of the second page but it may be 1949.

Q. Okay. The first page says August 1949, right?

A. It does.

Q. All right. This -- and down below there it's got a, the third one down there. You see that abstract?

A. Number 867?

Q. Right. See it?

A. Yes.

Q. Okay. And that's titled Asbestosis and Cancer of the Lung, right?

A. That's correct.

Q. And that's dated August 13, 1949, that abstract, right?

A. That's correct.

Q. And this abstract, it says in here, 'Reports of English, American, and German physicians in the annual report of the Chief Inspector of factories in England for 1947 show that the occurrence of cancer of the lung is related to pulmonary asbestosis', right?

A. That's correct.

Q. And it says, 'This relation is supported by the

following observations: One' -- the incidence of -- 'the incidence rate of cancer of the lungs in asbestosis patients is ten to 15 times as high as among the general population', right?

A. That's correct.

Q. Okay. 'The male/female ratio is more nearly equal than it is for the general population, which indicates that the environmental and evidently occupational carcinogen' -- I can't read that next one. Do you know what that one says?

A. -- 'tended to equalize the incidence rate of cancer of the lungs for both sexes. Recent experimental observations support this interpretation of clinical evidence.'

Q. Okay. And this 1949 asbestosis and cancer published in the journal of the American Medical Association Abstract, right?

A. It's an editorial -- this is an abstract. It's an abstract of an editorial. We don't have the whole editorial here. This is an abstract from it that the Industrial Hygiene Foundation -- there's a number of papers there. By abstract it means someone goes in and grabs the gist of the paper and puts it down or, in this case, editorial, and puts it down in a paragraph and

this is collected and put out in this Industrial Hygiene Digest which is produced and distributed to its membership by the Industrial Hygiene Foundation.

Q. Okay. The abstract is the gist of the article, right? Is that what you said?

A. That's correct.

Q. Okay. And this is an article or in a publication that Owens-Illinois did receive because they were a member of it, right?

A. Owens-Illinois was a member. Texaco was a member. Virtually -- many of the leading corporations in the United States were members of the Industrial Hygiene Foundation.

MR. McCOY: Your Honor, I would move to strike the part after the Owens-Illinois answer.

THE COURT: Okay. That will be stricken. The jury will be advised to disregard anything after the question was answered that Owens-Illinois was a member.

MR. McCOY: And the basis for that was it was not responsive.

THE COURT: It was non-responsive.

Q. Mr. Hazard, Dr. Neushul, certainly would have been following this Industrial Hygiene Digest abstract,

right?

A. I would imagine that the physicians and the hygienists at all corporations would follow this, including Mr. Hazard.

Q. All right. So he would have seen that in 1949, right?

A. He may have seen that.

Q. Next, Plaintiff's Exhibit Number 68. And first question --

THE REPORTER: Is that 68 or 69?

MR. FISCHER: Your Honor, may I approach?

THE COURT: You previously referred to a document as 68, although you didn't have any questions about it.

MR. McCOY: Okay. That should be 69. I apologize.

THE COURT: Okay. And now, counsel, you may approach.

(Whereupon a discussion was had by the Court and counsel out of the hearing of the Jury and the reporter, after which the

following proceedings were had in open court.)

Q. (By Mr. McCoy) Dr. Neushul, Exhibit Number 69, this is from the AMA Archives of Industrial Hygiene and Occupational Medicine, right?

A. That's what it says, yes.

Q. Okay. And this is a publication of the American Medical Association?

A. I believe so, yes.

Q. Okay. So again, this is the publication, type of publications of which Owens-Illinois, through its, like, Mr. Hazard and Dr. Shook, would be aware of, right?

A. They may well have been aware of this, yes.

Q. I mean, this is a peer-reviewed authoritative-type of publication, right?

A. What you've given me here is an abstract of a discussion. I don't see a paper so I don't know whether it's peer reviewed or not.

Q. Well, the journal is a respected journal, the AMA Archives of Industrial Hygiene and Occupational Medicine, right?

A. That's certainly a respected journal.

Q. Okay. So they printed here, as you said, an

abstract of a discussion, right?

A. This is from, presumably from a meeting. I don't know that it has to do with a paper --

Q. Okay.

A. -- at all.

Q. I understand. But, and it says 'discussion' right in the article, right?

A. It's not an article. What happens on occasion in these journals is you will have a series of articles; then there will have been an annual meeting and sometimes parts of that annual meeting will be published at the back of the journal. There must have been a meeting. This committee met and they published it; they've transcribed some of the discussion. I don't think there's a paper involved here.

Q. So the transcribed discussion was published in this journal, right?

A. It appears so.

Q. Okay.

A. I mean, it takes a big jump here. You go from page 185 to 262 so I don't know if the first page has anything to do with the next two.

Q. Right.

A. And I'm a little worried about dates and page

numbers when looking at this so I don't know if there's a connection between the two of them frankly.
Q. So somebody looking at page 262 would have seen, or could have seen if they looked at it, this table which talks about Cases of Carcinoma of the Lungs Detected Among 4,000 Asbestos Workers 1940 to 1950, right?
A. That is a table that's here.
Q. Okay. And in there, there is, it looks like one, two, three, four, five, six, seven, eight case reports, right?
A. Eight case reports.
Q. Okay. And they're all cancer reports, right?
A. One is for lymphosarcoma; there's two, what they're calling bronchogenic carcinoma.
Q. It's cancer, right?
A. They are cancer reports, yes.
Q. Okay. So, and there's two in here that they call pleural mesotheliomas, right?
A. There are two that they are calling pleural mesotheliomas but there is an asterisk --
Q. Doctor --
A. -- next to that and it says, quote, that's next to the name and then there's an asterisk below it. It

says, 'Standard Nomenclature of Diseases and Operations published by the AMA suggests the term mesothelial sarcoma.' It's hard to read that. So there's an asterisk next to that description. Evidently they're not sure and this, again, conforms with the pre-Wagner disagreement over whether this existed or not and what to name it.
MR. McCOY: Your Honor, I'll move to strike the last part of that answer. The witness said, "evidently not sure." Specifically, it's non-responsive. Lack of foundation on it.
MR. FISCHER: May I be heard on that?
THE COURT: You may approach. Counsel may approach.

(Whereupon a discussion was had by the Court and counsel out of the hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

THE COURT: I will grant the request as to any language concerning a Wagner report. The answer

with regards to the footnote I think was, in fact, responsive but the part after the end of what the footnote said and began comparing it or referring it to another report is not responsive, so that part will be stricken and the jury will be instructed to disregard that last part.
Please answer the questions as asked, sir.
Q. (By Mr. McCoy) Doctor, by 1952 then, there are cases that are being called in the literature pleural mesothelioma. That's the title, type of tumor that is being listed, right?
A. They are being called pleural mesothelioma with an asterisk next to it saying that it could be something else.
Q. Let's go to the next article. I want to show you Exhibit 70.
A. Thank you.
Q. Exhibit 70, Doctor, this is titled Case Reports, Asbestosis and Bronchogenic Carcinoma, right?
A. That's correct.
Q. Okay. And this is an article. The first author of it is Isselbacher, right?
A. That's correct.
Q. And in this article, again there's a report about

asbestosis and lung carcinoma, right?
A. Yes, that's correct.
Q. Okay. And this was in a person that was doing pipe covering work, right?
A. From what it says here it was a 41-year-old asbestos mill worker.
Q. And in Table 4 they list a number of, a summary of some of the past articles that have been published, right? It's on page 730.
A. What did you want to ask about Table 4?
Q. That's a list of some past case reports that have been published by other authors, right?
A. That's correct.
Q. And in that list they've got a number of cases in different occupations, right?
A. The occupations are described, yes.
Q. And these are people that had developed cancer, right?
A. It appears, yes --
Q. Okay.
A. -- that they have.
Q. So the occupation, there's reports of a pipe insulator, 1941, right?
A. Yes. It appears it's not -- it doesn't appear to

be lung cancer but he appears to have cancer. It's hard for me to discern from this but it says 'adrenal kidney'.
Q. It concludes -- it's got a number of occupations and a number of cancers reported, right?
A. There are, yes. These are case studies.
Q. Okay. And it states in there in the Summaries and Conclusions -- see that section down there, number four?
A. That's right, number four.
Q. It says, 'Asbestos is associated with bronchogenic carcinoma in 13.8 percent of the cases cited in the literature. In silicosis, the incidence is considerably less than this. The asbestos particle may serve as a carcinogen because of the chronic mechanical irritation it produces.'
A. That's correct.
Q. And it goes on to state, 'Since there are approximately 10,000 workers engaged in potentially hazardous asbestos operations in this country, it is reasonable to assume that there are many unrecognized cases of asbestosis. From the evidence presented a higher incidence of bronchogenic carcinoma should be expected in this group.'

A. That's what's stated there, yes.
Q. Okay. And again, this is a case report that would be available in the literature for Mr. Hazard, Dr. Shook, or anybody else at Owens-Illinois. Is that right?
A. They may have looked at the literature that this was published in. I don't see the source here. I recognize the paper. I've seen it before but -- oh, American Journal of Medicine.
Q. Right.
A. Dr. Shook may well have looked at that.
Q. Mr. Hazard maybe, too, right?
A. It's possible.
Q. So we get this on our chart here.
And we go from there to, 1953 to 1955. In the year 1955 that's when the Doll publication came out.
A. That's correct.
Q. This is a copy --
A. Thank you.
Q. -- which is now exhibit 71. So this one is titled Mortality From Lung Cancer in Asbestos Workers by Richard Doll.
A. That's correct.
Q. Okay. And he looked at, what, about 105 persons

who had been working in an asbestos environment, right?
A. That's correct. Sir Richard Doll is the preeminent epidemiologist of the 20th century. He will be the first in England to determine the connection between lung cancer and smoking in a, by studying a group of doctors who smoked. And then he will do this; this is an epidemiological study. He's seen case reports that show people with asbestos, as in -- asbestosis, as in the case of this Isselbacher and Hardy paper that we talked about, are beginning to contract lung cancer. There's a chance if you have asbestosis you may get lung cancer and so he does an epidemiological study of people with asbestosis.
MR. McCOY: Your Honor, I need -- as far as this witness is concerned, I would like to make a motion to strike parts of his answer. I asked him one question and he went on for quite a bit. I don't know which, you know, some of the answer I needed to get out but I wanted to get this thing done quickly. So, I mean, I'll make my motion to strike it as non-responsive.
THE COURT: I believe he actually answered your question at the very beginning . I think he said yes. The rest of it was either non-responsive

or additional information not required in your question, so I will strike that. I will strike everything after the witness indicated yes and the jury will be instructed to disregard the answer.
Dr. Neushul, please just answer the questions as asked.
Q. (By Mr. McCoy) Dr. Neushul, Sir Richard Doll looked at 105 persons exposed and employed in one asbestos works, right?
A. That's correct.
Q. Okay. And he found the lung cancer in 18 of those people, right?
A. You'll have to show me. I don't want to agree to that. If you want to show me what page you're talking about.
Q. I'll flip you to that. Page 86 in the summary.
A. Eighteen instances, 15 times in association with asbestosis.
Q. And then he goes on and he states, 'From the data it can be concluded that lung cancer was a specific industrial hazard of certain asbestos workers and that the average risk among men employed for 20 or more years has been of the order of ten times that experienced by the general population', right?

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A. That's correct, but I really feel you have to note under summary where you're reading from that all the subjects in whom both conditions were found had started employment in the industry before 1923 and had worked in the industry at least nine years before the regulations for the control of dust had become effective.

MR. McCOY: Your Honor, again I move to strike the last part as non-responsive.

THE COURT: And I will strike that. It was non-responsive. If the witness wishes to explain his answer and if the defendant's attorney wishes to give him a chance to do so that can happen.

Q. (By Mr. McCoy) So that's, would that be fair to say, like an epidemiological connection I think was the dimension you said.

A. Sir Richard Doll is an epidemiologist, the leading epidemiologist of the 20th century, and he is drawing a connection between people with asbestosis and lung cancer.

Q. And it takes a long time to conduct an epidemiological study, right? You have to look at people over a number of years for asbestosis, right?

A. In this particular instance, I believe he

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certainly looked at their work history. He notes that they had been employed in the industry for 20 years or more.

Q. And you're familiar with the latency concept for asbestos disease, right?

A. That certainly -- yes, I am familiar with that.

Q. Oftentimes it takes 20 years or even longer before a person will develop asbestos disease, right?

A. That would depend upon the level of exposure, how much you're exposed to, but certainly it could take 20 years or longer.

Q. And that's why these epidemiological studies have to cover people over long periods of time, right?

A. They can certainly be effective if they look at people over long periods of time.

Q. Okay. Now I want to go to this last document here, 72. Exhibit 72, Doctor --

MR. FISCHER: Object to this one, Your Honor.

THE COURT: Okay. Counsel, please approach.

(Whereupon a discussion was had by the Court and counsel out of the

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hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

Q. (By Mr. McCoy) Doctor, Exhibit Number 72, this is one you've got: Special Hazard Survey Prepared For Owens-Illinois, Kaylo Division, Berlin, New Jersey, right?

A. That's correct.

Q. Okay. And this was done on April 28th and May 2nd of 1958 according to its cover, right?

A. It appears so, and that is when the company no longer belonged to Owens-Illinois.

MR. McCOY: Your Honor, let me move to strike that last part as non-responsive again.

THE COURT: Technically -- okay. I agree. Everything as to, everything after that's right will be stricken and the jury will be instructed to disregard the answer.

Q. (By Mr. McCoy) The date of sale was April 30th, right?

A. I would have to look at the terms of the sale to be absolutely certain of when that was. If you have

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those, I would be happy to read it off of it.

Q. Well, you, you just said something about this document.

A. I believe that this is after that, after the company was sold.

Q. But you don't really know when the sale happened but you're saying it's afterwards, right?

A. Well, I can certainly defer to the deposition of Mr. Hazard, who clearly was not in charge of industrial hygiene based on who's listed here at the beginning of this document at the time that this was prepared.

Q. So you don't really know whether this was before or after the sale, right?

A. My impression is that it was after.

Q. Okay. But it is April 28th and May 2nd according to the documents, right?

A. It is those two days in 1958.

Q. All right. And what this looks at it, it says the purpose of it, right?

A. The purpose of this visit?

Q. Yeah. It says, 'The purpose of the visit was to determine employee exposure to dust in production operations', right?

A. That's correct.

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Q. So was this to determine exposures at the Berlin plant where the Kaylo was being made, right?
A. It says Berlin, New Jersey, at the top, yes.
Q. And it gives a number of activities that are involved, right?
A. There are a number of air samples taken at various locations.
Q. Okay. And, for example, if we look at air sample number three, that's a horizontal splitting saw, right?
A. That's correct.
Q. Okay. And that shows exposures at 91.8 million particles per cubic foot of air, right?
A. That's what they're saying there, yes.
Q. And there's a number of other exposures listed such as for flatware finishing, right?
A. That's correct.
Q. Forty-four point three million particles per cubic foot of air, right?
A. That's correct.
Q. And again, Doctor, I think you said it but exposures can be high and they can be low, right?
A. They can, and they can be total dust counts and they can be asbestos dust counts.
Q. Okay. All right. There is a whole range of

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these kinds of exposures depending on the activity, how far away from the breathing zone' a lot of different factors, right?
A. Yes. There could also be ventilation measures employed at the site or someone could be wearing a respirator.
Q. So these particular -- and, in fact, I think that was a recommendation made here, was to wear a respirator, right?
A. Show me which section where you see that.
Q. If you go to the last page, you see it?
A. Is this under Recommendations?
Q. Yes.
A. Which one would you like me to read?
Q. I think the whole thing might have some bearing on this. Number one, I'll read it as an example. It starts out and it says, 'A review should be made of the present respirator program in order to bring it up Owens-Illinois' standards and should include the following', and then it says, 'A, Two respirators should be provided for each employee exposed to dust so that one respirator can be cleaned, checked and sterilized while the other is being used.'
Did I read that one right?

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A. That's correct.
Q. And then it goes on and says, 'B, A clean, dust-free cabinet should be provided for storage of respirators at some convenient place when not in use', right?
A. That's correct.
Q. And then it goes on to say, 'C, Someone should be assigned to handle this cleaning on a daily basis, possibly the plant nurse', right?
A. That's correct.
Q. And, 'D, A respirator should be worn in all dust-producing areas which include take off at the splitter, charging a flatware line, unloading boxcars, molded strippings between rubbers on flatware line, and packaging of flatware', right?
A. That's correct.
Q. Okay. And then it continues on and it says, '2, A study should be made in regard to possibility of installing exhaust systems in order to remove the excess dust from the operator's breathing zone where the flatware is removed from the splitter, where flatware is charged on the finishing line, and the number one and two stripping operations', right?
A. That's correct.

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Q. These are all Kaylo production activities, right?
A. Presumably they are a component of the production line.
Q. And then it goes on and it says, 'The section of exhaust should be connected up at the end of the belt on the number one rubber', right?
A. It says that, yes.
Q. And then finally, number four, 'Recommendation which suggests that consideration be given for providing a vacuum cleaning system to eliminate hand broom sweeping and blowing down of overhead', right?
A. Yes.
Q. Okay. All right. So those recommendations were provided in this report which came from AETNA, right?
A. This report was generated by AETNA.
Q. Okay. All right. So this was in 1958, April/May Plant Report, and we had exposures in there as high as 91 million particles per cubic foot.
A. Total dust count.
Q. Okay. And Kaylo is up to 20 percent asbestos, right?
A. It could be, yes.
Q. Could it be higher?
A. In the discussion today I haven't seen a number

above 20 percent.
Q. Have you heard about numbers above 20 percent before, Doctor?
A. To the best of my recollection, it's 20 percent.
Q. Okay. Twenty percent of the 91 million would be, that's 18 million, right?
A. That's correct in that instance.
Q. So even if we go by what you're saying, which is an asbestos TLV of five million particles per cubic foot, now we're three times above that, right?
MR. FISCHER: Objection, Your Honor.
THE COURT: Counsel, please approach.

(Whereupon a discussion was had by the Court and counsel out of the hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

THE COURT: The objection has been overruled.
Sir, do you remember the question?
THE WITNESS: No.

THE COURT: Okay. Could we have it read back, please?

(The question found on page 126 at lines 8 through 10 was read back by the reporter.)

THE WITNESS: That certainly may be correct but there were portions of this plant where workers were wearing respirators and this may have been an area where respirators were employed as part of the dust control measures.
Q. (By Mr. McCoy) The TLV -- one other thing, Doctor. Doctor, this -- the Kaylo, you're familiar with the fact that that came in a box, right?
A. I believe Kaylo was delivered in a box.
Q. About three foot high and so wide?
A. It would probably depend on what was in there, whether it was pipe covering or block.
Q. Okay. Well, why don't you just -- what are the basic dimensions?
A. It may have been bigger than that. It depends on what, what size product was in the box.
Q. A couple feet wide or wider?

A. I honestly don't know. It could have varied.
Q. Okay. Well, have you seen the packaging on the Kaylo in the pictures and so on?
A. I've seen some pictures, yes.
Q. Okay. And those boxes, you say they're about three foot high, right?
A. It's hard for me to tell from looking at one of those pictures how high they are.
Q. It's big enough to put some lettering on it, right?
A. There was labelling on the box, yes.
Q. Okay. There's room to put a warning on the box, right?
A. As I explained earlier, warnings were not a part of business at that time and they will not be until the mid-1960s.
Q. You said they are "not a part of business"?
A. That's what I said.
Q. Okay. But I -- what do you mean, "not a part of business"?
A. What I mean is that if you were to look at products from that period, from the 1950s, if you were to transport yourself back to that time and look at boxes in a store, they do not have what we see today,

extensive warnings. If I go to a hardware store today and I buy a claw hammer there's going to be a label attached to it saying whenever you hit anything with this claw hammer you need to have a pair of safety goggles on. That's today. Shift yourself back to the 1950s. Those labels were not attached to claw hammers.
Q. So are you saying that it was okay to not have a warning back in the 1950s because that's what everybody else was doing who's in the business?
A. What I'm saying is that a lot has taken place in the ensuing ten, 15, 20 years, including Consumer Product Safety Commission, a whole series of government agencies that have made labelling required.
Q. We're talking about, though, the 1950s. I thought that's where we're at, right, not later events.
A. We are in the 1950s.
Q. Thank you.
A. But if you expect to see labelling in the 1950s, you have to take everything that we know now in the 1960s and '70s and then pose it on a different time when there was different thinking at that time.
Q. Doctor, there was, Owens-Illinois could have written warnings on the boxes about certain things, right, Kaylo boxes?

MR. FISCHER: Objection. Vague and argumentative.
THE COURT: Overruled. You may answer.
THE WITNESS: I don't understand. What is it that they're supposed to warn of?
Q. (By Mr. McCoy) Okay. So you're saying -- well, Doctor, the fibers penetrating to lung tissue, that could have been warned about, these curious bodies, as early as 1927, right?
A. So you're saying that they should have printed 'curious bodies' on the outside of a box in the 1950s?
Q. What I'm asking you, Doctor, is, is it your opinion that there was no, that Owens-Illinois did not have to do that because that was not part of business?
MR. FISCHER: Objection, Your Honor. Could we approach?
THE COURT: You may.

(Whereupon a discussion was had by the Court and counsel out of the hearing of the Jury and the reporter, after which the following proceedings were had in open court.)

MR. McCOY: Okay. I'll withdraw that.
THE COURT: And, for the record, there was an objection to the last question and it was sustained.
Q. (By Mr. McCoy) These items right here that I've listed -- fibers penetrating to lung tissues, dangerous exposure level, death, protective measures like respirators or exhaust systems -- Owens-Illinois could have printed a label on its Kaylo boxes listing all of those, right?
A. From what was known of the application of asbestos-containing Kaylo pipe covering, or in general pipe covering, you were never going to be exposed in that occupation to above the threshold limit value and so that was deemed to be a safe occupation so there's really nothing to warn of for someone applying that product.
MR. McCOY: Your Honor, I move to strike that as not responsive.
THE COURT: It will be stricken as non-responsive. The jury is instructed to disregard the answer.
Would the court reporter please read back the question?

(The question found on page 131 at lines 5 through 10 was read back by the reporter.)

THE WITNESS: Again, that was not part, that practice was not part of business at that time.
MR. McCOY: Your Honor, I object.
THE WITNESS: You are not going to see that on any kind of a product during, or any lettering like that on any product at that time.
MR. McCOY: Your Honor, same objection.
THE COURT: Okay. And the objection will be sustained again.
The question is, sir, if that could have been done; not whether you would have recommended or whether you think they should have.
So I will have the court reporter read back the question one more time.
Please answer the question.

(The question found on page 131 at lines 5 through 10 was read back by the reporter.)

THE WITNESS: No, I don't think they could have.
Q. (By Mr. McCoy) Is that because it wouldn't fit on the package?
A. No.
Q. It would fit on the package, right?
A. I don't think that within the context of that time that that would ever have crossed their mind to do that --
MR. McCOY: Your Honor, again --
A. -- and I don't think for that reason that they could have done that. I think what you're doing is thinking out of the historical context. I'm a historian. I look back at the setting within which these sorts of decisions were made. I see no indication at that time that any company would have behaved in that way, in that manner at that time. If you want to talk about it in the 1960s and the 1970s I can understand that, but otherwise, it's completely out of the historical context. And that's what I do. I put things within historical context.
MR. McCOY: Your Honor, once again I move to strike the answer as non-responsive.
THE COURT: The answer will be stricken

as non-responsive.
MR. FISCHER: To the extent that Mr. McCoy is asking if it would fit on the box, I would ask that he explain exactly how much he wants on the warning. We don't have an exact warning. Mr. McCoy is suggesting the answer, whether --
THE COURT: Well, the question as asked so far is if those words there could fit on the box.
MR. FISCHER: Just these words?
THE COURT: Just those words there. That's the question that has been asked.
Do you want to try to ask the question one more time or shall I ask the court reporter to read it back, again?
MR. McCOY: Just have it read back again, Judge.
THE COURT: Okay. And actually I think maybe it would be a different question this time because the first answer was no and then the question was why not and why was that so.
Anyway, if you would please, read back the last question that was asked.

(The question found on page 133 at line 6 was read back by the reporter.)

THE WITNESS: The lettering that is on that board would fit on a box of that size.
Q. (By Mr. McCoy) And, Doctor, just one final question. I just want to clarify. If you take a look at Owens-Illinois' Interrogatory Answers, you said you did not know the date when they sold the Kaylo business. Take a look at that.
A. (Witness complied with the request.)
Q. Would you agree that it was April 30th of 1958?
A. That's correct. It says here that, 'In addition, effective April 30, 1958, Owens-Illinois, Incorporated, disposed of the business involved in this action by way of sale.'
MR. McCOY: That's all the questions I have. Thank you.
THE COURT: All right.
And, Mr. Fischer, do you have any redirect?
MR. FISCHER: I do, Your Honor, thank you.

REDIRECT EXAMINATION
BY MR. FISCHER:
Q. Dr. Neushul, let's start out by talking about case reports. Mr. McCoy, if I recall, showed you case reports from Isselbacher in the early 1950s, Cartier in the early 1950s, and I think there was one from 1949.
Do case reports establish anything with regard to causation?
A. No.
Q. What kinds of studies in the medical and scientific literature deal with whether or not something causes a disease?
A. These are epidemiological studies, such as the classic study that was presented by Doll in 1955.
Q. In the Isselbacher report that was Plaintiff's Exhibit Number 70 -- do you have this one in front of you?
A. I don't think I have that.
Q. Let me grab that.
A. Okay.
Q. Okay. If you look at the first column on the left? The -- it's about three quarters of the way down, there's a sentence that says, 'In the clinical report'?
A. Is this on page 721?

Q. Yes.
A. Yes, I see that.
Q. Okay. Could you read, please, the sentence from there to the end of the paragraph?
A. 'In the clinical report presented herein, state authorities have determined by measurement that the asbestos dust exposure of this man during his 12 years of work was considerably above the safe level, which is considered to be five million particles per cubic foot of air for an eight-hour working day.'
Q. Okay. So they refer to the TLV as 'the safe level', right?
A. That's correct.
Q. And what does this report that Mr. McCoy showed you say about whether or not this man's employer violated the TLV?
A. Well, I mean, it's clear that he's, that he is working in conditions before safety measures were imposed, before the work environment was being held below the TLV.
Q. Could you look at Table 4, which is on page 730 of this same report?
A. (Witness complied with the request.) Okay.
Q. Okay. These are, a table involving the case

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reports that Mr. McCoy wanted to talk about, right?
A. That's correct.
Q. And some of these case reports indicate that some of these people in different jobs got lung cancer, right?
A. That's correct.
Q. Does it say how many of them were smokers?
A. I believe that is noted. I'm trying to find . . .
Q. Doctor, is smoking a cause of lung cancer?
A. Yes, it is, and there's a symbiosis between smoking and exposure to asbestos. Your chances of contracting an asbestos-related disease are enhanced significantly if you're a smoker. And I know that in this paper that's noted.
Q. Is that one of the reasons why case reports aren't used to establish causation?
A. It's difficult because if you have someone whose medical history is complex, their chances of developing disease may be influenced by other factors. They could be a smoker, they could also be working in an industrial setting: The combination of those two are going to vastly enhance their chances of contracting disease.
Q. Do the case reports try, in any way, to control

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for smoking with regard to whether or not there is a link between cancer and asbestos?
A. At this time I don't know that they're doing that. Later on we see --
Q. And epidemiological reports would do that, right?
A. That's correct.
Q. Okay. Let's talk about Cartier, which is another one of the reports that Mr. McCoy showed you. This one (indicating). This is Plaintiff's Exhibit 68.
Now, Mr. McCoy had given you page 185 and then you jumped to page 262, right?
A. That's correct.
Q. So we can't tell what's on the pages before that, right?
A. I don't know what article comes -- what this is a discussion of.
Q. Okay. Now Mr. McCoy wanted to talk about two case reports where there, it indicated pleural mesothelioma and then there was an asterisk, right?
A. That's correct.
Q. And it says that the standard nomenclature for this disease suggests mesothelial sarcoma, right?
A. That's correct.
Q. Are sarcomas the same as carcinoms?

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A. No.
Q. A sarcoma would be a totally different disease, right?
A. It's different. It's connective tissue --
Q. Okay.
A. -- so it's a different disease.
Q. Now, could you please read the paragraph just above the table? Mr. McCoy only showed you the table and asked you to talk about the table, right?
A. That's correct.
Q. All right. Look at the paragraph, one paragraph above the table that starts, 'On analyzing'.
A. Would you like me to read that?
Q. Please do.
A. 'On analyzing these data it seems obvious that many points would need discussion before anyone will be able to establish a causal relationship between these pathological findings and the asbestos factor.'
Q. It's obvious that these don't establish cause, right?
A. These are case studies. It's not an epidemiological study.
Q. The author says that it's obvious it doesn't establish cause.

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A. That's correct.
Q. Mr. McCoy asked you some questions about dust counts, right?
A. I believe so, yes.
Q. Does the Fleisher-Drinker report include dust counts for the use of products, pipe and block insulation?
A. Yes, it does.
Q. Does Fleischer-Drinker -- have the Fleischer-Drinker dust counts ever been challenged in the public literature?
A. No.
Q. Fleischer-Drinker said that pipe insulation is a safe occupation based on those counts, right?
A. That's correct.
Q. Did anybody go back in the 1960s after Selikoff and try to figure out whether or not those counts were right?
A. Yes. Balzer and Cooper in the 1960s will go back and say, look, guys, is this really true? Was there really this -- was there more dust or less dust? And they confirmed that the Drinker dust counts were accurate.
Q. Mr. McCoy asked you some questions about the

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Dreessen report. He asked you about a report from, that is a citation in the Dreessen report from 1918, right, if you recall, Dr. Neushul?
A. He may, he may have asked me about a citation from 1918. You will have to tell me where that was.
Q. If you remember, it was a citation, I think, Pancoast and Miller?
A. Oh, yeah. Pancoast.
Q. Okay. Do you recall that?
A. Yes.
Q. Okay. Now Dreessen obviously knew about that, right?
A. Yes.
Q. It's cited in their paper?
A. Yes.
Q. Could you turn to page 117?
A. Page 117? I do not have a page 117.
Q. Is that the copy that Mr. McCoy gave you?
A. I don't think I -- this isn't the complete report. The engineering section is not there.
Q. Oh, you know what? You're looking at the Bonsib Report.
A. I'm sorry.
Q. Okay. The Dreessen report.

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A. Oh, geez. Page 117. All right. Sorry. My page numbers are cut off --
Q. Here. Let me just give you mine.
A. -- on this one.
Q. One-seventeen.
A. Okay.
Q. See the sentence that, 'It would seem'?
A. Would you like me to read that?
Q. Well, is that from the conclusion of the Dreessen report?
A. It is. It's from the conclusion of the report.
Q. What does Dreessen say in his conclusions with full knowledge of what happened in 1918?
A. 'It would seem that if the dust concentration in asbestos factories could be kept below five million particles', paren, 'the engineering section of this report has shown how this may be accomplished', end of parenthesis, 'new cases of asbestosis probably would not appear.'
Q. Dreessen was studying a textile mill. Is that right?
A. That's correct.
Q. What were they making in the textile mill?
A. They were making cloth out of asbestos fibers.

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Q. What are the ingredients of the cloth?
A. The cloth is almost a hundred percent asbestos. There is a small cotton component as well. In our lifetime we've probably seen firemen wearing, we may have seen firemen wearing garments made of this sort of fabric but it's basically a hundred percent asbestos.
Q. So when you apply the TLV to a 100 percent asbestos environment, how does that work?
A. Well, you know that if you're staying below the TLV -- in that environment you're dealing with virtually pure asbestos dust. It's not a total dust standard because there aren't other dusts involved. It's just asbestos dust. So you know if you're staying below a TLV in that environment that you're staying within what they will term as a safe level.
Q. When Mr. McCoy asked you about some dust counts from the Bonsib Report -- do you recall that?
A. Yes.
Q. -- and he asked you about a peak count of 18 million. Was that a total dust count?
A. I'd have to look at that report. My memory of it is that it is a total dust count.
Q. How would you apply the TLV to a total dust count? How would you use the five million asbestos

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particle TLV when you have a total dust count?
A. Well, the A.C.G.I.H. will, has given you a total dust measurement. You're going to increase it to 50 million particles per cubic foot at that point. So it changes radically when you're not dealing with just asbestos dust, you're dealing with -- many of those insulations had a percentage of asbestos and then a large percentage of other dusts such as, for example, 85 percent magnesium, which is, as it states, 85 percent of the insulation is magnesium.
Q. Let's talk a little bit about the kind of exposures necessary to cause asbestosis versus the kind of exposures that are required to cause mesothelioma, okay? What kind of exposures to asbestos today, 2007, are necessary to cause the disease asbestosis, this scarring of the lung?
A. You're going to need the sorts of exposures the same as in the 1920s and 1930s. It's going to have to be certainly above the five million particle per cubic foot level in order to, a very high level of exposure in order to get that scarring inside your lungs.
Q. Has the medicine or science with regards to the amount of exposure to asbestos that you need to get asbestosis changed between the '40s and now?

A. I don't think it has changed significantly. You have to have a high level of exposure in order to develop asbestosis.
Q. When they discover mesothelioma, when do they begin to understand what the dose is that is necessary to cause mesothelioma?
A. That's something that is continuing to evolve but during the 1960s and during the 1970s they're going to learn that you could be exposed to a very low quantity of an asbestos-formed mineral and develop mesothelioma. People who never worked in industry or around industry have on occasion developed mesothelioma.
Q. Was there any understanding that there was a disease risk at low doses, low exposure levels to asbestos prior to 1958?
A. No.
Q. Mr. McCoy asked you about Sir Richard Doll and the 1955 report. Is that right?
A. That's correct.
Q. Could you please look -- well, first let me ask you, what kind of environment was Sir Richard Doll studying?
A. Sir Richard Doll is studying workers in the textile industry who were employed before any safety

measures were imposed, okay, before what in England they called scheduled areas were imposed. They went through the factory, looked at where everybody was working to see what sort of dust levels, and he specifically states this. He says, look, I'm looking at people that were exposed to asbestos over a long period of time, 20 years, before there were safety measures implemented.
Q. Could you take a look at Exhibit Number 71, please?
A. (Witness complied with the request.)
Q. Would you please look at the last page of Exhibit Number 71?
A. (Witness complied with the request.) Got it.
Q. In the left-hand column a few lines just above Summary, would -- do you see where it begins, 'It is clear however'?
A. Yes.
Q. Is the next sentence what you were walking about a few minutes ago?
A. Yes.
Q. Okay. Would you read that to the jury, please?
A. Okay. 'The extent of the reduction is particularly striking when it is recalled that between 1933 and 1953 the incidence of the disease among the men

in the country at large has increased sixfold.'
Q. Okay. Now go over to the right-hand column. You see the paragraph that says, 'From the data'?
A. Yes.
Q. All right. The last, please read the last sentence of that paragraph.
A. 'The risk has become progressively less as the duration of employment under the old, dusty conditions has decreased.'
Q. Okay. Now please look at Table 2 on page 82.
A. (Witness complied with the request.) Okay.
Q. Do you see the column that says, 'Years of Exposure Before January 1st, 1933'?
A. Yes.
Q. Okay. What does that tell you about the risk that Doll found for people who were exposed to uncontrolled dust environments as opposed to people who were exposed where there was dust control?
A. There's a considerably greater risk if you're exposed without any dust control.
Q. Only two more, Dr. Neushul.
The, Plaintiff's Exhibit Number 72 which was the dust survey.
A. Okay. All right.

Q. Okay. One of the last questions Mr. McCoy asked you was to confirm by looking at the answers to interrogatories that the date of the sale of the Kaylo division was, it was April 30th of 1958?
A. I believe that's correct.
Q. Okay. So, and this study was done on April 28th and May 2nd, right?
A. That's correct.
Q. So on May 2nd we've got the new management in, right?
A. I can see from the looking at the names of the managers listed here that they're new, yes.
Q. Okay. And the recommendations by the AETNA, the insurance company, Mr. McCoy asked you to read them from the last page, right?
A. That's correct.
Q. The recommendations are to the new management 'to get the plant up to Owens-Illinois' standards', right?
A. That's correct. It appears that, you know, obviously Willis Hazard is no longer involved and their standards are not at the O.I. standard.
Q. Now lastly, Mr. McCoy had asked you some questions about the TLV and whether or not the TLV was truly a safe level, right?

A. He may have asked questions to that effect.
Q. Okay. And I have here the TLV for 1953. It's Owens-Illinois Exhibit 1009 and I believe it's already been identified for the record through the examination of Mr. Parker.
With Your Honor's permission, may I share a copy with Dr. Neushul?
THE COURT: You may.
Q. (By Mr. Fischer) Dr. Neushul, would you please just identify that document for me, first.
A. Okay. This is the Threshold Limit Values for 1953 Adopted at the Meeting of the American Conference of Governmental Industrial Hygienists that was held in Los Angeles that year.
Q. And does it indicate in the preamble -- and I've highlighted it there for you -- that the, what the idea was of the TLV?
A. Yes.
Q. Could you read that to the jury?
A. 'They represent conditions only within which it is felt that workers may be repeatedly exposed, day after day, without their health being adversely affected.'
Q. Is there any reason to believe that the

A.C.G.I.H., these government industrial hygienists, were publishing a TLV that they knew people were going to get sick if they followed it?
A. No. And it's something they reviewed every year. The names of the people on the committee are, you know, the leaders in the field and, as I stated earlier, it doesn't change for a very, very long time.
Q. Is the TLV the best thinking of the day with regard to how to maintain a safe environment with regard to asbestos?
A. This was what, this was the data that, within the context of that time, in the 1950s, everyone looked to as a way of insuring safety in the work place.
Q. Did Owens-Illinois use and follow the TLV?
A. Yes, they did.
MR. FISCHER: Those are all the questions I have. Thank you.
THE COURT: Mr. McCoy, any additional questions?
MR. McCOY: Just a couple.

CROSS EXAMINATION
BY MR. McCOY:
Q. The Dreessen report that you talked about, did

Dreessen say in there that it's okay to work in conditions that looked like there was snow in the air from the pipe covering and block insulation in the Kaylo pipe?
THE COURT: Just a second, please.
MR. FISCHER: Objection, Your Honor, as stated previously.
THE COURT: Okay. Overruled. You may answer.
THE WITNESS: I don't believe he states anything about, quote, snow in the air in that article, but if you have a section to show me I would be happy to look at it.
Q. (By Mr. McCoy) I don't know of any either, but I was asking.
Then did Dreessen also say it would be okay to shovel asbestos, put block and pipe covering, the Kaylo type, off the ground, dump it in a wheelbarrow and do that for eight hours a day? Did Dreessen say that was okay?
A. Dreessen is looking at the textile industry which probably generated far higher levels of dust than the activity you just described.
Q. Doctor --

A. He doesn't say anything about shovelling pipe covering. That's not what the topic is.
Q. Right. And you, the comparison that you just made between the two, you're not an industrial hygienist who's studied data to be able to say that a factory, textile factory versus shovelling Kaylo off the ground, what difference there might be in those exposures. You don't have that experience, do you?
A. Well, we know from certainly our on-going discussion here that when you're working with asbestos at a textile factory it's a hundred, virtually a hundred percent, okay? You're talking about Kaylo, which, as you've stated repeatedly, is 20 percent.
Q. Doctor, what I'm asking you is, do you have industrial hygienist data to compare those two types of exposures?
A. I'm a historian. I look at the history of industrial hygiene. There's certainly some history in the Dreessen report.
Q. But, as far as being able to compare the actual numbers, you're just speculating, right, the numbers?
A. The numbers are the numbers.
Q. Okay.
A. I mean, you have numbers from the Bonsib Report

on dust levels from removing insulation; you have numbers from the Dreessen report on the textile industry.

Q. What I'm asking you, Doctor, again, is the numbers of the shovelling eight hours a day of Kaylo off the ground compared to whatever happened in the Dreessen textile factory, you don't have those two sets of numbers to make the comparison, do you?

THE COURT: Just a second, please.

MR. FISCHER: Objection. It assumes facts not in evidence.

THE COURT: Okay. The objection is sustained.

MR. McCOY: That's all the questions I have, Judge.

THE COURT: Okay. Anything further, Mr. Fischer?

MR. FISCHER: No.

THE COURT: Okay. Thank you, Dr. Neushul. You may step down.

THE WITNESS: Thank you.

(Witness excused.)

THE COURT: Okay. Would counsel approach, please?

(Which was all the evidence offered and received and all other proceedings had on the Excerpt of the Report of Proceedings, being the testimony of PETER NEUSHUL, in the Jury Trial in the above-entitled cause.)

STATE OF ILLINOIS
IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT
CRAWFORD COUNTY

I, TRACI D. ACKMAN, an Official Court Reporter for the Circuit Court of Crawford County, Second Judicial Circuit of Illinois, do hereby certify that I reported in shorthand the proceedings in the above-entitled cause; that I thereafter caused the foregoing Excerpt to be transcribed into typewriting, being the testimony of PETER NEUSHUL, which I hereby certify to be a true and accurate transcript of the said testimony at the Jury Trial, had before the Honorable MARK L. SHANER, Judge of said court.

TRACI D. ACKMAN
Official Court Reporter
CSR #084-003370

Dated this 25th day of February, 2008.

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